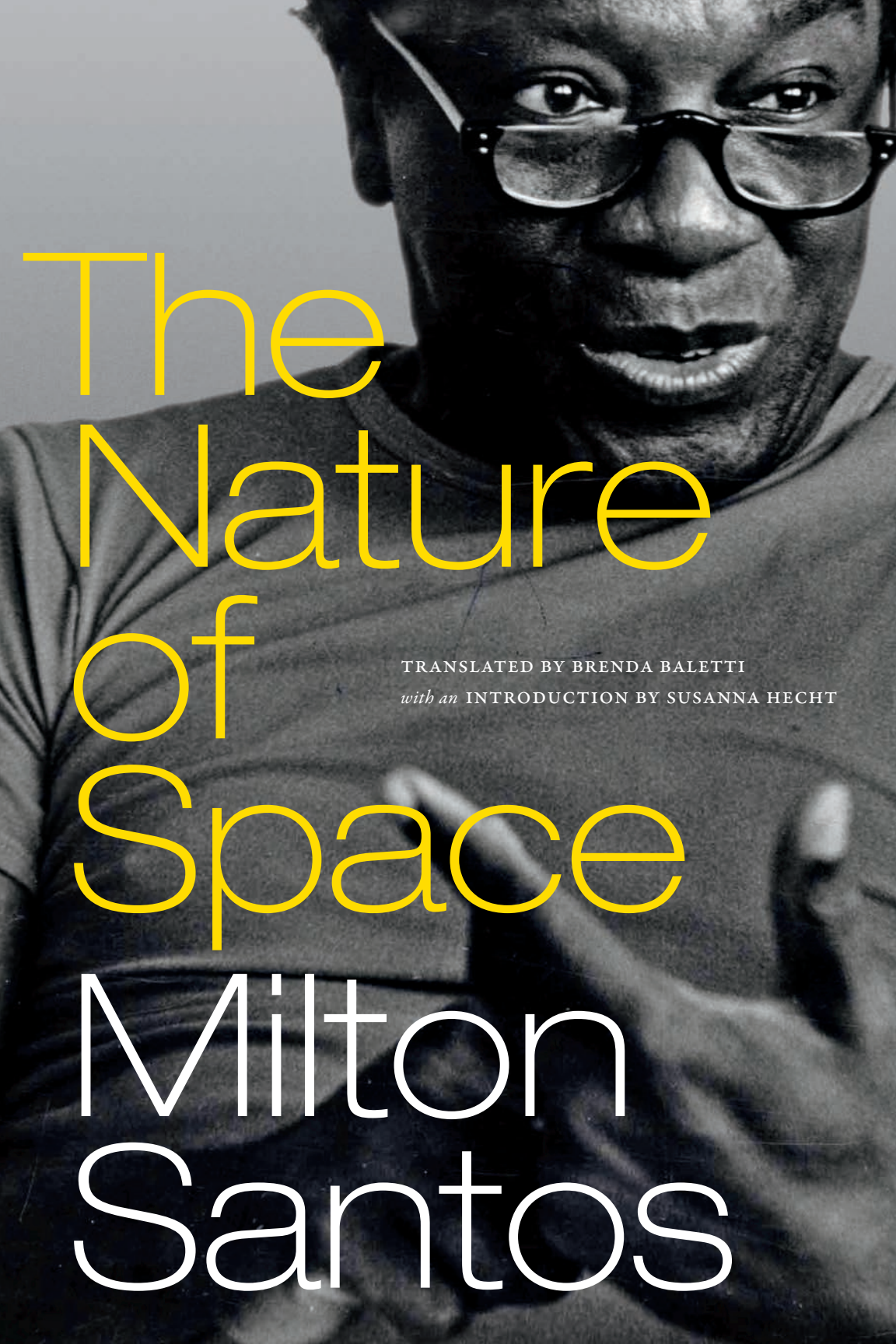

The Nature of Space

TRANSLATED BY BRENDA BALETTI
with an INTRODUCTION BY SUSANNA HECHT

Milton Santos

The Nature of Space

A book in the series Latin America in Translation / En Traducción / Em tradução
Sponsored by the Duke–University of North Carolina Program in Latin American Studies

The Nature of Space

Milton Santos

TRANSLATED BY BRENDA BALETTI
WITH AN INTRODUCTION BY SUSANNA HECHT

DUKE UNIVERSITY PRESS DURHAM AND LONDON 2021

A Natureza do Espaço: Técnica e Tempo, Razão e Emoção

Dados Internacionais de Catalogação na Publicação (CIP)
(Câmara Brasileira do Livro, SP, Brasil)
Santos, Milton, 1926–2001
A Natureza do Espaço: Técnica e Tempo, Razão e Emoção
/ Milton Santos.—4. ed. 2. reimpr.—São Paulo: Editora
da Universidade de São Paulo, 2006.—(Coleção Milton
Santos; 1)
Bibliografia.
ISBN 85–314–0713–3
1. Espaço e tempo 2. Geografia 3. Geografia—Filosofia
4. Geografia humana I. Título. II. Série.
02–3478 CDD-910.01
Índices para catálogo sistemático:
1. Espaço e tempo: Geografia: Teoria 910.01
2. Tempo e espaço: Geografia: Teoria 910.01

Printed in the United States of America on acid-free paper ∞
Designed by Matthew Tauch
Typeset in Garamond Premier Pro by Westchester
Publishing Services

Library of Congress Cataloging-in-Publication Data
Names: Santos, Milton, author. | Baletti, Brenda C., [date] translator.
Title: The nature of space / Milton Santos ; translated by Brenda Baletti.
Other titles: Natureza do espaço. English | Latin America in
translation/en traducción/em tradução.
Description: Durham : Duke University Press, 2021. | Series: Latin
America in translation/en traducción/em tradução | Includes
bibliographical references and index.
Identifiers: LCCN 2021000786 (print) | LCCN 2021000787 (ebook)
ISBN 9781478013488 (hardcover)
ISBN 9781478014409 (paperback)
ISBN 9781478021704 (ebook)
Subjects: LCSH: Space and time. | Geography.
Classification: LCC BD621 .S2613 2021 (print) | LCC BD621 (ebook) |
DDC 114—dc23
LC record available at https://lccn.loc.gov/2021000786
LC ebook record available at https://lccn.loc.gov/2021000787

Cover art: Photograph of Milton Santos, 1977.

Contents

Introduction to the
English-Language Edition

Milton Santos
Rebel of the Backlands, Insurgent Academic, Prescient Scholar

SUSANNA HECHT

Milton Santos was a Brazilian geographer, development analyst, and activist. Born into a family of teachers descended from slaves, he was among the most prominent public intellectuals of his generation. His intellectual ties to French analyses of regional development and American critical geography did much to transform those fields, from their somewhat parochial perspectives to perspectives more engaged in both theory and practice "from the South." Santos helped transform the understandings of development and provided a robust critique of development planning as it unfolded in the 1960s and 1970s, while simultaneously forging new methods and practices for the transformation of communities, as well as new understandings of how nature, history, and the complexities of lived life produced citizenship, rights, and the formations of urban and rural life.

Milton Santos's writings are enjoying new prominence as his work is finally more widely translated. Appreciations of his intellectual contributions have recently appeared in special issues of journals such as *Antipode* (in 2017) and in volumes such as the collection edited by Luis Melgaço and Carolyn Prouse, *Milton Santos: A Pioneer in Critical Geography from the Global South*. Such belated acclaim is appearing now, in part, because his letters and archive are now available at the Institute for Brazilian Studies (IEB) in São Paulo, which materials have helped chart his complex international trajectory. The extent and influence that Santos had on his international networks in France, the United States, and Brazil has become better known as this archive has become accessible. Santos's status in research in critical and integrative geography has advanced as these areas have grown in prestige and as Latin American and especially Brazilian scholars have assessed his legacy.[1] This intellectual inheritance is deeply cosmopolitan and multilingual, and it reflects his engagement with French geographers and regional development thinkers as well as his dedication to reconsidering and nourishing Brazilian geography, helping it evolve from what had been a kind of descriptive and cartographic slumber into a discipline focused on tracking and analyzing the complexity of the forces and outcomes of Brazil's aggressive modernist planning, warp-speed urbanization, and environmental change. In his highly itinerant life, Santos also expanded relationships with Marxist and development geographers in the United States, such as Richard Peet and Neil Smith, on the problematics of development as discourse and practice, and he later interacted geographer and planning scholar (and Henri Lefebvre acolyte) Edward Soja on the constructions of spatiality and postmodern geographies.

Santos built upon the long-standing "French connection" maintained by Brazilian intellectuals with their continental counterparts, although historically this had been expressed primarily through the consumption of continental fashions. In contrast to what had been a kind of imitative affinity, Santos contributed actively to Third World decolonial analytics and a strong critique of Third World development—especially the dominant growth pole models—to the French geographic community, whose members included such thinkers as Jean Tricart and development geographer Yves Lacoste. He questioned whether such models could easily fit with the tropical realities they were meant to transform and what, really, these places were supposed to transform into, once one looked at the realities a bit more closely. Diasporic intellectuals from Brazil were, as Ferretti points out, part of "international, cosmopolitan and multilingual scholarly and

activist networks on geography and development, where they interacted with scholars from the 'Global North' and exerted an important influence in these radical circuits, especially in the 1960s and 1970s."[2] As an Afro-Brazilian from the interior of the Brazilian Northeast, Santos was part of a broader community of political exiles that included physician (and geographer) Josué de Castro (who worked at institutes with Michel Foucault and Gilles Deleuze) and economist and regional planner Celso Furtado, both of whom had participated in the attempts to transform the Northeast under the new ideas of regional planning and had left under duress during the military dictatorship (1964–1985). Santos, like his exiled colleagues, had held important political and activist positions as a planner and advisor in the Northeast development agencies, and indeed in the highest realms of national politics. The Northeast was a hot spot of national poverty, the apotheosis of uneven development, and a laboratory for the politics and practices of development—and was a brutal realm for development models to fail in. Santos was a close advisor of President João Goulart during an especially tumultuous and radical phase in Brazilian history. Santos traveled with him to Cuba in 1961 and dreamed of an international career. Santos had in mind the world of diplomacy rather than that of exile.

Like Josué de Castro (*The Geography of Hunger*) and the economist Celso Furtado (*Obstacles to Development in Latin America*), the critiques developed by this exile cohort were informed by significant experience in the bureaucracies and realities of tropical development politics and practices. These, in the end, did little to change the approach to, or the reality of, the economic structures of the Northeast, especially once the military took over in 1964. These exiles, however, were collectively able to begin critical and substantive rethinking of development discourses and practices through their ideas, which were rooted in the history, landscapes, repeated climate catastrophes, and vast social inequalities of the Northeast. It is in this context that Santos's work can be seen as shaping and updating the nature of the debates on development through theory, but also tying these questions to the material processes, including (and especially) those of the environment, that produced the poverty, wealth and instabilities in the socio-economies of the perennially insurgent Northeast. Santos's work shaped the nature of the debates on development through modifying classic geographic "man and nature" thematics with modern political economic ideas, while De Castro worked from the medical and historical perspectives, and Furtado from the development economics framings of Henri Perroux's growth pole development ideas, and Raul Prebisch's import substitution

macropolitics. This intellectual dynamic contextualized the more rooted "totalizing" approach embraced by Santos, and his strong critique of the planning practices of the time.

Historians of science and scholars of cultural studies and politics have made the mobility of ideas a focus in the construction of cosmopolitan cultures. This approach ranges from the long history of indigenous guides informing the work of Von Humboldt and European enlightenment sciences to today's remote sensing experts, historians, and development analysts.[3] What is surprising is how late critical geography and critical development studies were in really understanding and embracing the work of Latin American scholars, especially geographers such as Milton Santos, who were years if not decades ahead of the curve when their ideas and insights—the Latin American origins of which were certainly underappreciated—became all the rage in Euro-American academic circles and seminar rooms. Partly this has to do with the Anglophone dominance of postwar geography and the poor understanding in the US of how integral Latin American thinkers were to the creation of critical studies of development, especially as it evolved in France.[4] These circuits were not exactly unknown but were certainly appreciated to a lesser extent than "dependista" scholars such as the sociologist (and later president of Brazil) Fernando Henrique Cardoso.

During the period of the decolonization of the Third World after World War II, as well as of what one might call the "golden age of planning" in Brazil (of which the city of Brasilia is probably the best known result), a series of showcase projects were being implemented in the Brazilian Northeast for managing watershed basin development under the more general influence of French regional economists, the CEPAL (United Nations Center for Economic Policy for Latin America) school of macroeconomics, and Tennessee Valley Authority (TVA) intellectuals and technocrats.[5] This combination of development paradigms, as well as the aggressive *ex nihilo* high modernist (and authoritarian) urban planning, was to become the hallmark of Brazilian planners and their advisors throughout most of the postwar period, especially during the dictatorship, and was widely used as the operative model for regional planning throughout South America .[6]

The conditions of possibility for activist scholars at this time were primarily as participants in a fragile progressive moment from the mid-1950s to the early 1960s, as critics and public intellectuals, and, with the arrival of the military regime, finally as exiles. Santos's collaboration in and commitment to critical analytic circuits in geography, development studies, and

theories of globalization were fueled in part by the features of his own biography, and despite the early appearance of his published work (beginning in the 1960s and continuing through the early 1980s), Santos's ideas are especially insightful because he came to them as a very dark "preto," even in the expansive Brazilian lexicon of race, and as a person from "the interior"—the poverty-wracked hinterlands of the Brazilian Northeast, shaped by the legacy of slavery, indigenous death, millenarianism, revolt, and poetry.

EARLY TIMES IN THE BAHIAN SERTÃO

Santos was born in the village of Brotas de Macaúbas—a place named after a local palm which slaver settlers drove to extinction. Macaúbas is now mostly known for its beautiful white quartzite, currently mined for its popularity as kitchen countertops. Santos was the child of a poor family of elementary school teachers, descendants of slaves, who taught him how to read at an early age even though he would not formally begin study until the age of ten. He exhibited great intellectual talent, and although he came from exceedingly humble origins, he would go on to have an exalted career. Initially trained in law at the University of Bahia, he received his doctorate in geography from the University of Strasbourg. While he did not overlap at Strasbourg with another seminal spatial thinker of the later twentieth century, Henri Lefebvre, clearly the ambiance was conducive to critical thought and integrative ways of understanding place. Writing in a clear and powerful style, Santos would become one of the intellectual progenitors of critical geography and critical development studies, publishing numerous books and winning a number of prizes, including the Vautrin Lud award, considered the "Nobel" of geography for outstanding achievement.

The great Brazilian writer Euclides da Cunha made his reputation with his description of life in the Bahian backlands, *Os Sertões* (1902), the region that was the landscape of Santos's youth.[7] Da Cunha described how the newly minted Republic of the 1890s waged war against a millenarian uprising based in a tropical utopia called Canudos, in the arid forests of the Caatinga.[8] The settlement was basically a Kilombola community, or slave refuge. It also served as a sanctuary for women whose men had been coffled and shunted to labor in the coffee fields of Brazil during the twilight days of slavery, as the delicious tropical beverage exploded into Brazil's southern forests and into global markets. Canudos was a liberational space at the far margins of Brazilian history. The backlands, Milton Santos's homeland, was a region of forgotten villages whose culture was formed from the syncretic

amalgam of black, indigenous, and European lineages and cultures, which produced what da Cunha called the "bedrock of our race." These cultures fueled creativity and adaptability in the face of extreme poverty, an unforgiving nature, and an indifferent social world. But this place, for both da Cunha and for Milton Santos, provided an excellent locale for thinking through questions of history, power, economics, nature, and geography. What is so striking is the historical, environmental, and social sense of place evoked by da Cunha, which is echoed in the approach to the reality of place and the creation of extended spaces of meaning and action that Santos insisted on in his writing. Human life was not just some disarticulated way of being, divorced from the planet and its places. Space and place were essential to the creation of ontologies and epistemologies (framings) and were structured by both human and nonhuman forces interacting with and through each other, what Bruno Latour would later term "actants."[9] In the terminology of political ecology, spatial studies, and science and technology studies, these places are "coproduced" by the interaction of nonhuman and human agents. These landscapes and urban systems materialized as outcomes of histories, economies, cultures, imaginaries, and symbolic meanings.[10] As austere and unforgiving as these Bahian landscapes seemed, they were also something else, and for both da Cunha and Santos, the backlands served as a wellspring, a way of using the periphery (and the *periferias*, Brazil's favelas) as a way to understand central processes of nature, culture, economy, and power in shaping the human habitats and lives—and particularly how these processes had unfolded in Third World development, urbanization, and general contexts of capacities and capabilities. The method would later become known as "decentering."

The Bahian backlands—scourged by drought and penury—was the early heartland and incubator of Brazilian slavery, but it also produced its opposite, what the Brazilian historian João José Reis has called "the invention of freedom."[11] These were the kilombos, the runaway slave refuges which constituted a significant part of the occupation of the Brazilian interior at the time and which occupied both daily folklore and heroic mythologies. Kilombos became enduring emblems of the resilience, power, and potential of the alternatives shaped by interior inhabitants and interior lands, and a symbol of transgressions against power. Kilombos were also testimony to the powers of creativity and reinvention wielded by Northeasterners, da Cunha's "bronzed titans," whether they reconstituted themselves in Amazonia or in the vast "urban jungles" of southern Brazil.[12] They were, in a fundamental sense, the desperate labor reserve army for whichever develop-

ment program was on offer, but they also could offer different imaginaries of the future.[13] Attentiveness to the liberational energies that could emerge from the most dire of circumstances is part of what gave Santos his immense humanism—his "reason and emotion."

ITINERANT INTELLECTUALS

As has already been mentioned, Santos was a member of a diaspora of activist intellectuals from the Brazilian Northeast. They had all been engaged with regional development programs and their massive associated planning apparatus—a keystone enterprise of the "Alliance for Progress" as part of a Cold War counterweight to radical movements in Latin America. Various programs, but especially the state-coordinated SUDENE (Superintendency for the Development of the Northeast), focused on this constellation of very poor states, which were periodically ravaged by El Niño droughts, were mired in a class system resembling feudalism, and which had some of the highest indices of inequality and lowest indicators of human welfare in South America. Not surprisingly, its populace was given to insurrection, millenarianism, banditry, and agrarian reforms movements.[14] These were all understood, framed by the Cold War ideology of the military regime that came to power in 1964, as communist and subversive activities.[15]

Santos was a close advisor to the progressive president João Goulart. Santos had been highly critical of the autocratic processes and outcomes of regional planning regimes in the Northeast, and this put him at odds with both the national and regional development coteries and the local elites who continued to structure policy and programs.[16] Santos's experience as a person working as a practitioner in the "high modernist" projects of development was important in forming his critical and also emotional perspectives on the nature of development and change within the brutal politics of modernization, the legacies of which—despite being mostly invisible to outsiders—were still largely in place. It also made him a tireless critic of modern planning, as his manifesto "Planning Underdevelopment" clearly lays out.[17]

Santos was arrested and subsequently spent three months in jail, and was then released from prison only on the condition that he be deported. The Brazilian military regime was generous to some in its expansive view of banishment, rather than simple torture or death, as a means of cleansing the body politic. Santos then spent much of his professional life as an exiled nomad—and for thirteen years was unable to return to Brazil. In this time

he became a deeply cosmopolitan intellectual, juggling posts in Europe, Africa, and the United States.

SANTOS, CRITICAL DEVELOPMENT, AND CRITICAL GEOGRAPHIC STUDIES: THE NATURE OF SPACE

Santos's contributions can be considered part of a more general movement diverting critical geography away from simple Marxist critiques and infusing them with more cultural and environmental content. Santos's concern with the nature of power relations, technologies, and economies—and how these together constructed spatial regimes—incorporated questions of nature that set him apart from more doctrinaire Marxist thinkers whose approaches at the time had very little environmental content. Santos's concern was more generally to move away from deterministic, reductionist, or descriptive models (which had affected a lot of Latin American development analytics) and instead toward explanatory ones, which he used to address the larger question, "What is geography?" Santos's focus was less on the form of geographies than on their formation, and how in the end geographic methods had to be explicatory. His concerns were not the self-indulgent outpourings that came to characterize much of the later cultural turn in critical geography, where, given his background, he could have had an adulating audience. Rather, Santos soundly rejected the language and posturing of the cultural turn even as he explored cultural questions through his work on epistemology and on what would appear as an early harbinger of Bruno Latour's idea of networked "actants" in the construction of place.[18] Santos never abandoned empiricism as part of his method, and he linked empiricism to questions of landscape, territorial configurations (systems of governance over place), divisions of labor, citizenship, and questions of region, network, and scale. Santos would frame these within the historical systems that produced them, both in their ontological and local configurations, as well as in their broader external formation through the dynamics of regional economies and globalization, woven together through meta-epistemologies and methods. The initial works in which Santos develops these ideas were written in the 1970s and 1980s, most seminally in the work "Toward a New Geography" (1978). His studies of "socio-spatial dialectics" form an integral part of his work, one in which expressions of power are never distant, where the idea of insurgent citizenship is always present and, perhaps less noticed, the physical environment also influences. His realism and humanism help explains his concern over questions of citizenship and

urban rights, as well as his significant role in the Peace and Reconciliation Council—modeled on those of South Africa—of the Archdiocese of São Paulo at the end of the military dictatorship. He very much believed in transformation, and he also imagined a globalization of rights, dignity, responsibilities, and care. His deep internationalism—developed first as an exile and later as an illustrious visiting professor in Europe, Tanzania, and the United States—helped him clarify the articulations of social formations at multiple scales.

In addition to his experiences in the Bahia of his youth and early training, and his disillusionment with the modernist planning project, Santos's research and writing were influenced both by the Brazilian dependent development analytics and by the widely influential French spatial philosopher and sociologist Henri Lefebvre.[19] Although Santos and Lefebvre did not overlap at the University of Strasbourg, the critical mentalities in the emergent social sciences there exerted a strong influence and he engaged Lefebvre's ideas throughout his life—although Santos was far less doctrinaire than his spatial "muse" and his work more environmentally inflected. It could certainly be argued that the practical and biographical experience of Santos and the other exiles suffused French thought in critical geography and in the more radical critiques of development, and that the global movement and maturation of these ideas relied heavily on the informed experiences of the small group of Northeastern exiles.[20]

Santos's work is also characterized by the clarity of his prose. In a time of turgid, jargon-laden articles on spatiality, his luminous sentences reveal his mastery of the ideas and the depth of his scholarship. He is also a scholar of multiple intellectual lineages, especially those that fall outside the Anglophone realm, who brings earlier thinkers—including geographers as well as development thinkers—together in a larger narrative. What Santos's work shows is the complexity of modernity, how multiple modernities can be usefully engaged in more concrete ways. While many Brazilian analysts melt into air, either with very small case studies or with hyperabstraction, Santos actually tacks very effectively and illuminatingly between the theoretical and the concrete.

Santos's point of departure in *The Nature of Space* is the question, "What is Geography?" Although the discipline has fragmented into disparate elements, and has ranged and reinvented itself widely, it remains one of the few disciplines that maintains a nineteenth-century interest in the meaning and the unveiling of the whole human-environment planetary exercise. It is here where Santos's positioning as part of a search for operational and

constitutive rather than simple descriptive reality is most salient. Santos focuses on ontology and fluently integrates the actor-network framework into his explanatory framework, emphasizing how nonhuman elements form part of the shaping of everyday enterprise as well as the cumulative structuring of lives, economies, cultures, and environments. In Santos's rejection of the simple dichotomies of socioculture/economics or socioculture/nature, his work seeks a tripartite linkage of socioculture, economics, and nature in a holistic way, an approach which is completely recognizable today as political ecology—though few political ecologists are aware of this legacy. Santos further frames these ideas within historical sensibilities in the evolution of place, and thus in a way prefigures a kind of environmental history that evokes and integrates humanized landscapes as well as nonhuman forces. He is not a determinist, but his insights in many ways prefigure how climate and history are increasingly used in understanding how powerful interactions of human forces are materialized in places. Thus, writers like Dipesh Chakrabarty, Mike Davis, and Gillen Wood, among others, have now operationalized the kind of approach that Santos advocated, in which nonhuman actors are also part of the action and the narrative.[21] Santos most explicitly speaks to multidisciplinarity, but speaks perhaps more importantly to *metadisciplinarity*, that is, the engagement of analytics of different disciplines through the apprehension of their varied epistemologies or framing paradigms. The poverty-stricken Northeast of Brazil had been a kind of development planning laboratory, a key site for the implementation of TVA planning exercises, intended as a showcase for development approaches that were supposed to define the Alliance for Progress.[22] Santos's role in Northeastern planning under Goulart had given him up-close experience with the complexity and contradictions of development as both idea and practice, and this not only led him to reframe his geographical thinking, but shaped his formation of critical development studies. Santos's approach remains remarkable for his time, especially given the triumphalist contemporary language about the "dreamscapes of development"

Santos's discussion of metadisciplinary thinking is a crucial element of his geographic analytics and catalytics. He relies significantly on Latourian ideas to argue that such concepts and places have constitutive force in the shaping of the world. The questions of spaces, regions, scales, and environments emerge through a *technosphere*—a kind of epistemology of practices—infused with symbolic ideas and incarnations of historical ideological forms that infuse the physical and social processes that structure the world. Because Santos engages both large-scale as well as nonhegemonic

local rationalities, he is able to stimulate the construction of different epistemologies within the context of geographical inquiry. This was especially important in the 1960s and 1970s, when geography was turning away from its "people and places" roots toward a more quantitative empirical discipline. Santos's style of integrative and explicatory geography is now becoming more visible through new approaches such as political ecology, critical urbanism, global studies, and the social studies of sciences. Santos gives us in many ways the "deep background" and intellectual roots that underpin these contemporary empirical and social frameworks. While critical geography may have had its day and run aground on its language, dissociation, and over-heated constructionism, critical development studies and political ecology remain vibrant and active in multiple disciplines. The final section of *The Nature of Space* attends to globalization writ large and to the how local and global orders intersect in the construction of space. While this hardly appears novel now, at the time the sense of the overpowering ability of external forces to obliterate the local required the articulation of a counterargument, what might be called "the taming power of the small." Such global forces appear irresistible, but they confront local orders that may point forward to a different future. This is to some degree the deep lesson of da Cunha as well as of Santos.

The Nature of Space captures the generosity of spirit of Santos's work. This volume, twenty-five years in the making, provides a useful stratigraphy and genealogy to current geographical thought in development thinking. Much is made these days of postcoloniality, and there is much interest in scholars whose mentalities were not colonized, not always referential (and to a degree deferential) to fashionable Global North academics on both sides of the Atlantic—but they are few. For the most part, scholars from the non-Anglophone Global South, and especially from its peripheries, such as the backlands of Bahia, almost never break away from or break through their circumstances. In this way Santos is all the more remarkable, and what is especially impressive is that he reads as fresh as ever. International ideas have caught up with him, especially through his insights on the profound influences of natures and spaces in the interaction and shaping of human conditions, through the triple forces of environment, globalization, and urbanization in the developing world. What is geography? For Santos it was the scale of history as it unfolds in active places. While *The Nature of Space* is a product of its era, its insights continue their relevance today.

Introduction

MILTON SANTOS

This book is the product of many years of research. The task that I initially took up grew over time, as did my uncertainty regarding where exactly the project was headed. The technical-scientific period in human history that this book seeks to interrogate has been taking shape little by little since World War II, and a systematic understanding of its central characteristics could therefore only emerge gradually. Since the 1980s its development has accelerated significantly, and my timidity and hesitation intensified accordingly, delaying the completion of this project.

When Jean Brunhes published *Human Geography* in 1914, he apologized to his public and his editor for the book's ten-year delay. In this case my responsibility is greater, because my delay has been even longer. I can echo him in saying that my delay is due to care, rather than to negligence.

The research that forms the basis of this book, along with a few other related publications, spans nearly a quarter of a century and has all of the limitations typical of such an endeavor. In trying to interpret the present moment, the sheer multitude of events can seem to accelerate time and, in doing so, challenge established truths and dismantle existing knowledge. But even a tremendous groundswell of new commentaries cannot obviate the importance of philosophical debates whose lessons are not merely conjunctural. Perhaps it is this insight that has allowed me to overcome the same fear that Maximilien Sorre expressed in the introduction to his *Treatise,* where he noted that certain pages of his book would

be outdated before the book was even printed. He wrote, "I will accept this catastrophe and I will not be devastated by it, as long as I still am able to provide the reader with an orientation and a method."

My explicit goal in writing this book is to produce a system of ideas that can serve as a point of departure for a descriptive and interpretive system of geography. Geography has always aspired to present itself as a description of land, its inhabitants, and the products emerging from their relations, which effectively includes all human action on the planet. This aspiration begs the question, what is a good description? Description and explication are inseparable. The desire to explicate should be the basis of good description, and good description itself presupposes the existence of a system. When such a system is lacking, the resulting descriptions are merely isolated fragments that move us further from the goal of producing a coherent branch of knowledge and an indissoluble object of study.

This book emerges from my long-term dissatisfaction with conversations around a few key questions in geography. The first is regarding the question of what constitutes geography's proper object of study. This question often gives rise to an interminable discussion about what geography is, and the commentaries tend to be extremely contradictory, rarely allowing us to move beyond tautological formulations. This is due in part to the fact that some geographers explicitly argue, and many practice, the idea that we can define geography by what each geographer does. Following from this perspective, we have as many geographies as geographers. Thus, with the pretense of openness, asking the question—"What is geography?"—becomes an exercise in futility. In other words, even an exhaustive discussion of the discipline cannot substitute for what is actually required to answer such a question, which is the discussion of the object of the discipline.

In reality, the *corpus* of a discipline should be subordinated to its object and not vice versa. In other words, our primary concern must be with space rather than with the nature of the practice of geography. A discussion of space necessarily presupposes an approach to method; to speak of an object without speaking of method is simply to state a problem without truly understanding it. An ontological approach—i.e., an interpretive effort *from within* the object—is therefore imperative, because it allows us to identify the nature of space and articulate the categories of study through which we can properly analyze it.

Such a task assumes that we encounter concepts drawn from reality, which fertilize one another through their compulsory association and which can be used to grasp that same reality in movement. We might call this

method the search for operationality, the search for a constitutive rather than descriptive force, which can only be found through historical analysis—an analysis of a reality in movement.

My second point of dissatisfaction is around the much-discussed unity of time and space, which we will address here by exploring the inseparability of these two categories. In practice most research begins by stating its commitment to affirm the unity of these concepts, but then proceeds to treat them separately. There have been a few advances made toward thinking this unity. For example, the concepts of period and periodization do this, as does Torsten Hägerstrand's work, which allows us to think about the spatial order created by time. Nevertheless, much work remains to be done in this area.

A third theme taken up in this work interrogates the Anglophone expression, "Place matters," which is to say that place is important—something that we had previously argued in our 1978 book *Por uma geografia nova*. Yet the literature that followed that book demonstrated that in the absence of a clear definition of space, even an abundance of examples can only amount to a description, and never an explication, of the role of space and place in social processes. Perhaps this limitation helps to explain why this discussion was exhausted so quickly.

Our fourth point of dissatisfaction is in the way that geography has approached an analysis of the contemporary moment. As if caught up in a fad, geography has succumbed to the weaknesses of postmodernism, the most popular version of which can only offer metaphor and description, and which remains incapable of producing a system of thought. That is to say that it is only in this spirit of developing a systemic analysis that we might encounter the key concepts that would constitute the foundations of an object and of a discipline. Take, for example, Georges Gurvitch (1971: 250), who insists that "there is no rigorous parallelism between the spheres of the real and the sciences that study them." This is similar to William James's (1950) discussion of the reality of all that is conceived. In another example, Schutz's idea of "the limited provinces of meaning" (1987c: 128) parallels James's idea of "sub-universes." Drawing from these authors we might argue that fields of study should correspond to areas of social life or, following the geographer Carl Sauer (1963: 316), parts of reality.

The challenge is therefore to separate out a particular field from the whole of reality so that this field can appear autonomous while remaining integrated into the whole. This raises the important problem of defining an object for a discipline and ensuring that the delimitation and relevance

of that discipline necessarily passes through metadisciplinarity and not the reverse. That is, constructing the object of a discipline and constructing that discipline's metadiscipline are simultaneous, linked processes. There is only one world. It is seen through a given prism, through a given discipline, although, for a set of disciplines, the constitutive materials are the same. This is what brings the different disciplines together and what, for each, should guarantee, as a sort of control, the criteria of total reality. A discipline is one autonomous, though not independent, piece of general knowledge. Through metadisciplinarity we can transcend truncated realities and partial truths without trying to philosophize or theorize our way around them. However, to transcend is not to escape. To avoid the illusion of escaping, we must also adopt the opposite course of action [*démarche*]: in seeking transcendence, the rule of the metadiscipline is the discipline itself. To transcend without transgressing depends on knowing the appearance of the real that we are addressing or, in other words, knowing our object.

This raises the question of geography's disciplinary relevance. In order for space to be an independent analytic entity within the social sciences, its concepts and instruments of analysis must have a sense of coherence and operationality. This is the only way that we may we demonstrate the legitimacy and indispensability of the object of study. Analytic categories and instruments are the heart of method within the various disciplines. When we lack coherence and operationality, that which becomes residual is often considered "given" and, as such, it gets eliminated from the central system of analysis. For example, each time that a geographer does their research without first concerning themselves with their object, they are acting as if that object is "given," and they end up engaging in a blind exercise without providing adequate explanation for the procedures adopted, and without establishing consistent, adequate, or appropriate rules for implementing those procedures. This practice is quite common, and this points to the need for the methodological construction of a field of knowledge that has both internal and external coherence. Externally, such coherence is developed through the possibility of a given field being distinct and yet at the same time completing and complementing other knowledges in the common process of knowing the totality of the real. Internal coherence is formed by separating analytic categories that on the one hand account for the particular appearance of the real within a given field's own partial knowledge and, on the other hand, allow for the production of instruments of analysis that are removed from historical processes. These concepts should, by definition, be internal to the object that they correspond

to—in this case, space—and simultaneously be constitutive of and operational to it.

As a point of departure, we propose that space be defined as an indissoluble set of systems of objects and systems of actions. To systematize our analysis, we seek to construct a unitary analytic framework that would allow us to overcome ambiguities and tautologies. In doing so, we would be able, following Canguilhem (1955), both to formulate problems and to see concepts appear. Our secret objective, following the example laid out by Bruno Latour in his book *Aramis, ou, L'amour des techniques* (1992), is for these concepts, notions, and instruments of analysis to appear as real actors in a novel, seen within their own shared history. Should science not, as Neil Postman (1992: 154) proposed, be "a way to tell stories?" To do this, the researcher facilitates a process by which some actors take center stage, while others are made secondary or are tossed out. Method in social sciences then becomes the production of an "artificial device" in which the actors are what Schutz (1987c: 157–58) calls marionettes or homunculi. The one who ultimately gives them life is the author, which is why they are called "homunculi," and their presence in the plot is subordinated to the actual qualitative modeling—which is why we might think of them as marionettes. But the text should also make it possible for the puppets to surprise the ventriloquists and take on lives of their own, writing an unanticipated story—ensuring that the analysis conforms to concrete history.

In this case, we seek a precise and simple characterization of geographic space that does not risk dependence on mere analogies or metaphors. As Dominique Lecourt (1974: 79) wrote, "metaphors and analogies should be analyzed and referenced within their terrain of origin," which is to say that comparisons might be brilliant in a literary sense, but such brilliance is not always synonymous with conceptual richness.

If we begin from the idea of space as indissoluble systems of objects and systems of actions, then we can recognize its internal analytic categories, including landscape, territorial organization, the territorial division of labor, produced or productive space, roughness [*rugosidade*], and content-form. Similarly, and also as a point of departure, we encounter the problem of defining spatial areas and the corresponding debates around region, place, networks, and scales. We must also attend to the question of the environment, with its diverse human-made content, as well as to the question of complementarity between the technosphere and a psychosphere. We can simultaneously propose that the question of the rationality of space is both an actual historical concept and the result of the emergence of networks

and the process of globalization. The geographic content of the everyday is also included among these constitutive and operational concepts that belong to the reality of geographic space, alongside the questions of both a world order and a local order.

The dynamic study of the internal categories of space requires that we recognize certain basic processes originally external to space, including: technique, action, objects, norms, events, universality, particularity, totality, totalization, temporalization, temporality, idealization, objectivization, symbols, and ideology.

The internal coherence of a theoretical construct depends on the extent to which the analytic elements of that construct can adequately represent the object of study. In other words, a system's categories of analysis should reveal its existential content. They should reflect the very ontology of space, beginning with its internal structures. A construct's external coherence emerges from the exterior structures in which it is located, and which define society and the planet. For example, the understanding of the internal categories of space would be impossible without history and the sciences as common knowledge.

A focus on technique brings these internal and external categories together and allows for internal and external coherence to be empirically integrated. This focus should be seen as having a triple function: revealing the historic production of reality; inspiring a unitary method (distancing us from dualisms and ambiguities); and, finally, guaranteeing that we can apprehend the future, in that it does not allow us to become mired in a concern with the particulars of any given specific technique. Rather, we should be guided, in our method, by technical phenomenon seen philosophically, that is, as a whole.

Based on these premises this book seeks to provide a geographic contribution to the production of a critical social theory. In building this contribution, I privilege four moments. In the first moment, I attempt to work with the concepts that constitute the being of space in order to encounter its ontology: technique, time, and intentionality, as materialized in objects and actions. In the second moment, I take up the ontological question again, considering space as a content-form. In the third moment, I revisit the ideas established above in the context of present history in order to understand the contemporary constitution of space and to be surprised by the concepts—whose system is open and dialectic—that are emerging in the contemporary world, and that are located both in hegemonic and nonhegemonic rationalities. In the fourth moment, the recognition that concur-

rent rationalities exist in the face of the dominant rationality provides new perspectives on method and action, which allow for shifting perspectives on spatial and social evolution and suggest changes in the very epistemology of geography and the social sciences as a whole.

These four moments are the basis for the four major sections of the book, which provide the structure for its fifteen chapters.

The first part, "An Ontology of Space: Founding Ideas," addresses the nature and role of techniques (chapter 1) and the movement of production and of life, through objects and actions (chapter 2). I examine techniques, which function as systems that define different eras, through their own histories and in terms of their material and immaterial characteristics. I argue that the concept of technique allows us to make time empirical and able to be understood through the idea of a geographic milieu. In this analysis, it is important to understand technique as something where the "human" and the "nonhuman" are inseparable. Otherwise, it would be impossible to overcome the dichotomies, so persistent in geography and the social sciences, that oppose the natural and the cultural, the objective and subjective, the global and the local, and so on. In the second chapter, I consider the movement of production and life around objects and actions, where technique again plays a central role. In other words, I argue that both natural and man-made objects can be analyzed according to their respective contents, or, put differently, according to their technical conditions. The same can be said for actions, which can be distinguished according to their varying degrees of intentionality and rationality.

The second part of the book takes up the question of the ontology of space; however, rather than foregrounding the foundational concepts, I examine historical outcomes. I analyze space in terms of its existence as a content-form. In other words, I explore it as a form that has no empirical or philosophical existence separate from its content; or in still other words: content cannot exist without the form that houses it. Given the inseparability of objects and actions discussed earlier, the notion of intentionality is fundamental here for understanding the process by which actions and objects become merged through the permanent movement of the dissolution and recreation of meaning. The production and reproduction of this hybrid—space—with the interminable succession of content-forms, is the central dynamic trait of its ontology and the focus of chapter three. The category of totality is key for understanding this movement (chapter 4), because we understand it to exist within a permanent process of totalization that is simultaneously one of unification, fragmentation, and individuation.

Places are created, recreated, and reworked with each movement of society. The division of labor is the motor of this movement (chapter 5), and in every scission of totality, it imbues places with new content—a thousand new meanings and one entirely new sensibility. Events (chapter 6) are the vectors of this metamorphosis, uniting objects and actions. They do not represent some unnamed time but an empiricized, concrete one that is produced precisely as the bearer of a historic action. According to this formulation, the union between space and time that we are seeking is more likely to be treated systematically in geography than elsewhere.

The third part of the book offers a discussion of the present moment and the conditions that exist for the realization and transformation of space. Addressing these issues implies understanding what constitutes the existing technical system (chapter 7), and how, from the conditions of this contemporary—informational—technical formation, material and political conditions are created that allow for the production of a planetary intelligence (chapter 8). These dynamics of contemporary history allow us to return to one of the central discussions of the book, which pertains to how contemporary objects and actions create and intensify norms (chapter 9). This same data allows us to characterize the current geographic environment as a technical-scientific-informational one (chapter 10). Chapter 11 explores the existence of networks as the product of contemporary techniques, along with the problems and ambiguities that they produce. In the functioning of these networks we can examine the production of verticalities (the "space" of flows formed by points) which serve a regulatory function at all geographic scales, even while horizontalities (the spaces of contiguity) renew and recreate themselves (chapter 12). The idea of the rationality of space (chapter 13) also emerges from the contemporary conditions of the world, and demonstrates how the development of capitalism makes possible the diffusion of the hegemonic rationality into different aspects of economic, social, political, and cultural life, and also establishes that rationality through construction of territory.

Although the fourth part of the book might appear to be a conclusion, it should not be thought of as one. This part of the book addresses what we are calling the power of place. Chapter 14 seeks to demonstrate the relationship between place and the everyday, revealing the ways that the same place can be used in contradictory ways according to the different perspectives held by different actors. This chapter moves toward an epistemological rupture, given the surprising evidence of the effectiveness of counter- and parallel rationalities that make themselves realities in the face of the

hegemonic rationality and that point toward new and unsuspected paths of thought and action. The same idea inspires the final chapter, entitled "Universal Order, Local Order." Although the universal order may be frequently presented as irresistible, it is nevertheless faced and confronted, in practice, by a local order, which is a source of meaning and which points toward a different future.

Notes

INTRODUCTION TO THE ENGLISH-LANGUAGE EDITION

1 L. Melgaço, "Thinking Outside the Bubble of the Global North: Introducing Milton Santos and 'The Active Role of Geography' Organisers: Lucas Melgaço and Tim Clarke," *Antipode* 49, no. 4 (2017): 946–51; and F. Ferretti, "Geographies of Internationalism: Radical Development and Critical geopolitics from the Northeast of Brazil," *Political Geography* 63 (2018): 10–19.

2 Ferretti, "Geographies of Internationalism."

3 J. Cañizares-Esguerra, "How Derivative Was von Humboldt?," in *Nature, Empire, and Nation* (Palo Alto, CA: Stanford University Press, 2006), 112–28; N. Safier, "Global Knowledge on the Move: Itineraries, Amerindian Narratives, and Deep Histories of Science," *Isis* 101, no. 1 (2010): 133–45; N. Safier, "Itineraries of Atlantic Science: New Questions, New Approaches, New Directions," *Atlantic Studies* 7, no. 4 (2010): 357–64; F. Nunes, R. Rajao, and B. Soares, "Boundary Work in Climate Policy Making in Brazil: Reflections from the Frontlines of the Science-Policy Interface," *Environmental Science and Policy* 59 (2016): 85–92.

4 Melgaço, "Thinking Outside"; F. Ferretti and B. Viotto Pedrosa, "Inventing Critical Development: A Brazilian Geographer and His Northern Networks," *Transactions of the Institute of British Geographers* 43, no. 4 (2018): 703–17.

5 J. Holston, *The Modernist City: An Anthropological Critique of Brasília* (Chicago: University of Chicago Press, 1989); J. C. Scott, *Seeing Like a State* (New Haven, CT: Yale University Press, 1998).

6 Scott, *Seeing Like a State*; T. J. Finan and D. R. Nelson, "Making Rain, Making Roads, Making Do: Public and Private Adaptations to Drought in Ceara, Northeast Brazil," *Climate Research* 19, no. 2 (2001): 97–108; D. Ekbladh, "Meeting the Challenge from Totalitarianism: The Tennessee Valley Authority as a Global Model for Liberal Development, 1933–1945," *International History Review* 32, no. 1 (2010): 47–67; E. Buckley, *Technocrats and the Politics of Drought and Development in 20th-Century Brazil* (Chapel Hill: University of North Carolina Press, 2017).

7 E. da Cunha, *Os sertões* (Rio de Janeiro: Laemmert, 1902).

8 The Caatinga forests are a semi-arid, highly diverse environment adapted to the intense periodic droughts associated with El Niño weather events.

9 B. Latour, *Science in Action* (Cambridge, MA: Harvard University Press, 1987).

10 A. Metcalf, *Go-Betweens and the Colonization of Brazil* (Austin: University of Texas Press, 2005); P. Robbins, *Political Ecology* (New York: Routledge, 2011); P. Descola, *Beyond Nature and Culture* (Chicago: University of Chicago Press, 2013); S. Jasanoff and S.-H. Kim, *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (Chicago: University of Chicago Press,); E. V. d. Castro, *The Relative Native: Essays on Indigenous Conceptual Worlds* (Chicago: Hau, 2016).

11 J. J. Reis, *A invenção de liberdade: O negro no Brasil* (São Paulo: Companhia das Letras, 2003).

12 S. Hecht, *The Scramble for the Amazon and the Lost Paradise of Euclides da Cunha* (Chicago: University of Chicago Press, 2013).

13 J. J. Reis and F. dos Santos Gomes, *Liberdade por um fio: História dos quilombos no Brasil* (São Paulo, Editora Companhia das Letras, 1996).

14 D. M. d. Albuquerque Júnior, *A invenção do Nordeste e outras artes* (São Paulo: Cortez, 2011); S. E. Blake, *The Vigorous Core of Our Nationality* (Pittsburgh, PA: University of Pittsburgh Press, 2011); J. De Castro, *The Geography of Hunger* (New York: Little, Brown and Company, 1952); N. Arons, *Waiting for Rain: The Politics and Poetry of Drought in Northeast Brazil* (Tucson: University of Arizona Press, 2004); P. R. Pessar, *From Fanatics to Folk: Brazilian Millenarianism and Popular Culture* (Durham, NC: Duke University Press, 2004).

15 T. E. Skidmore, *The Politics of Military Rule in Brazil, 1964–85* (New York: Oxford University Press, 1988).

16 Arons, *Waiting for Rain*; J. N. B. Campos, "Paradigms and Public Policies on Drought in Northeast Brazil: A Historical Perspective," *Environmental Management* 55, no. 5 (2015): 1052–63; J. A. Marengo, R. R. Torres, and L. M. Alves, "Drought in Northeast Brazil: Past, Present, and Future," *Theoretical and Applied Climatology* 12, nos. 3–4 (2017): 1189–1200.

17 This document is published in *Antipode* 49, no. 4, and is introduced by Lucas Melgaço. Melgaço, "Thinking Outside."

18 M. Santos, "A revolução technologica e o território: Realidades e perspectivos," *Terra Livre* 9 (1991): 7–17.

19 F. H. Cardoso and E. Faletto, *Dependency and Development in Latin America* (Berkeley: University of California Press, 1979); P. B. Evans, *Dependent Development: The Alliance of Multinational, State, and Local Capital in Brazil* (Princeton, NJ: Princeton University Press, 2018).

20 L. Melgaço and C. Prouse, *Milton Santos: A Pioneer in Critical Geography from the Global South* (Cham, Switzerland: Springer, 2017); Ferretti, "Geographies of Internationalism"; Ferretti and Viotto Pedrosa, "Inventing Critical Development."