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Tony Robinson
Minsun Ji

Sustainable, Smart and Solidary Seoul

Transforming an Asian Megacity

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Tony Robinson
Department of Political Science
University of Colorado Denver
Denver, CO, USA

Minsun Ji
Rocky Mountain Employee
Ownership Center
Denver, CO, USA

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Preface

This book showcases how innovative state policy in South Korea transformed Seoul from one of the world's most impoverished, polluted, and congested cities into a global leader in green urban planning, smart city innovations, and social economy initiatives that have dramatically improved the local quality of life. Though today's immensely scaled cities face profound challenges of prodigious waste, chaotic sprawl, and social polarization, this book presents an optimistic case that modern megacities, like Seoul, can become sustainable, smart, and supportive places to live.

These are important lessons for today's urban moment. As megacity populations explode and a growing majority of all people now live in cities, our collective future has become increasingly urban. New York, London, Mumbai, Tokyo, and Singapore: these are the kinds of massive urban agglomerations where people increasingly live and where the serious challenges of sustainable living, intelligent planning and social solidarity must be worked out in the years to come. Though plentiful broadsides criticize exploding cities as anomic, unsustainable, and even catalysts of global collapse, Seoul's recent transformations tell a different story of how urbanism can be done right: innovative planning and collaborative public–private partnerships can reshape development patterns in a way that significantly improves local life. Seoul's story confirms what the United Nations Environment Program found in their 2021 report *Towards Green and Just Cities*: intelligently designed and increasingly green cities can become inspirational models for others to follow. As a case in point, Seoul has become one of those cities being redesigned as more sustainable, intelligent, and inclusive: as such, Seoul officials are helping drive progress towards achievement of the UN's 2030 Agenda for Sustainable Development.

The inspiration for this case study of Seoul's urban innovations began during our many lengthy travels across the Korean peninsula. Over the last two decades, we have been co-professors teaching annual month-long university study abroad trips to Korea. At the height of the COVID pandemic, we were fortunate to live in Korea for more than a year during an academic sabbatical. During all those experiences it became clear that something promising was happening in Seoul. We have personally observed green spaces steadily expanding in the city and enjoyed the benefits of smart city innovations, from world-class mass transit to global leadership in COVID control. We have benefitted from Seoul's innovative sharing city programs ourselves: from ubiquitous bike-sharing locations across the city to

community meal shares in Seoul's Sungmisan cooperative village. Through many years on the ground in Seoul, we developed a shared understanding that Seoul's trajectory was decidedly optimistic, and every year our study abroad students similarly concluded that the Seoul success story needed to be more widely shared. In those experiences, the seeds of this book were planted.

The book begins with a historical overview of economic development in South Korea from the 1960s–1990s, a period when state-driven industrial developmentalism built Korea as a rapidly growing export-oriented economy and resulted in the vast, polluted, and congested city that Seoul had become by the 1980s. The book then details how state urban development and planning policy underwent substantial transformations in the 1990s and beyond, as Korea's growing national wealth and newly minted democracy (dating to 1987) provided an environment conducive to more livable, well-planned, and equitable urbanism. As a result of policy changes and grassroots initiatives over the last thirty years, Seoul has experienced a wave of green urban design projects, technological innovations, and sustainable social economy initiatives that have transformed life in the city. The global community has taken note and a wide range of international organizations, city governments, and urban planners are increasingly turning to the "Seoul model" for inspiration in how to improve urban development processes across the world.

Today, Seoul's residents enjoy the world's highest penetration of high-speed internet, numerous green innovations, a world-leading mass transit system, early adoption of smart city technologies, and some of the globe's lowest urban crime rates. The city consistently rates among the top 15 most inventive places in the world by the Innovation Cities Program. Seoul is vast and sprawling, but also increasingly green—between 2012 and 2016 the city added 197 new green spaces to its urban fabric and today about 28% of the city is open green space (more than Paris, San Francisco, Amsterdam and New York City). Seoul is economically divided between rich and poor but has become a growing world leader in social equity initiatives of the solidarity economy. The United Nations Research Institute for Social Development says Seoul has become a leader in the rollout of solidarity economy innovations like cooperative villages, mutual benefit societies, and social investment funds that advance humane and equitable development goals amid a booming capitalist economy.

This book examines how Seoul achieved these promising results in five categories.

- Sustainable Development: Recycle, Reuse, Reduce
- Green Space: Restoring Clear Water and Urban Forests
- Managing Mass Transit: Modern, Efficient, Equitable
- Smart City Design: Wired, Integrated, Agile
- The Solidarity Economy: Homegrown Social Economics.

Planners and entrepreneurs in Seoul are helping to innovate the future, showcasing initiatives in urban design, sustainable development, and solidarity economics that can be productively built upon elsewhere. Understanding these Seoul innovations will broaden our imagination of what good urbanism can achieve. To that end, this book is a review of Seoul's recent achievements in smart, sustainable, and solidary urbanism—achievements that put Seoul at the forefront of urban innovation today.

Denver, USA

Tony Robinson
Minsun Ji

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We would also like to acknowledge our immense debt to all of Seoul's urban planners, green innovators, and social economy activists we have met over the years. We learned so much from the residents and activists of Sungmisan Cooperative Village, from the staff at Seoul's Nakwon Sanga culture center, and from so many similar social economy innovators across the city. Green urban planners took our classes on tours of the Cheonggyecheon stream restoration project every year, and we learned firsthand to appreciate the contributions of Seoul's apartment building recycling managers when we lived in the city for a year during our recent sabbatical. We are also thankful to the planners of "smart city" Songdo (a new city on the edge of Seoul) who walked us many times through the innovations of tomorrow, emerging on the ground today.

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Contents

Abbreviations

BRT	Bus-Only Rapid Transit Lanes
CCTV	Closed Circuit Television
CRP	Cheonggyecheon Restoration Project
DDP	Dongdaemun Design Plaza
EU	European Union
EV	Electronic Vehicle
FAC	Framework Act on Cooperatives
FOSE	Framework Ordinance on Social Economy
G20	Group of Twenty (An intergovernmental forum comprising 19 countries and the European Union)
GGGI	Global Green Growth Initiative
GHG	Greenhouse Gases
GSEF	Global Social Economy Forum
ICT	Information and Communication Technology
IMF	International Monetary Fund
IoT	Internet of Things
KSV	Korea Social Value Fund
LSEEDP	Local Social Economy Ecosystem Development Project
NBLSA	National Basic Living Standards Act
OECD	Organization for Economic Cooperation and Development
OPEN	Online Procedures Enhancement for Civil Applications Service
RFID	Radio Frequency Identification
SDGs	Sustainable Development Goals
SEEs	Social Economy Enterprises
SEOES	Social Economy Organizations and Enterprises
SEPA	Social Economy Promotion Act
SMG	Seoul Metropolitan Government
SRC	Seoul Resource Center
TOPIS	Transportation Operations and Information System
U-City	Ubiquitous City
UN	United Nations
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNRISD	United Nations Research Institute for Social Development
VBWF	Volume-Based Waste Fee

List of Figures

Introduction

1

1.1 Wicked Problems of Megacity Seoul

This book tells how the 26-million-person megalopolis of Seoul, Korea became an increasingly beneficent place to live. Focusing on the strong leadership of Seoul Metropolitan Government (SMG), we showcase how good governance can make urban life more green, infrastructure more smart, and social relations more solidary. Just a few decades ago, this story could not have been told, for Seoul in the 1990s was one of the most wasteful, polluted, and congested cities in the industrialized world. Though Seoul had risen from the ashes of the Korean War (1950–1953) to experience a dramatic economic transition, the resulting urban landscape was hardly to be celebrated. Euny Hong recalls Seoul of the 1980s and 1990s as a "grim, dangerously crowded place" (Hong 2012). But today, Seoul is winning international awards for its innovations in sustainable, smart, and solidary urban planning. The Seoul metro area hosts the UN's Green Climate Fund, Seoul is the founder of the Global Social Economy Forum, and the city has won accolades for its leadership in both "smart" and "sharing cities" movements. In this book, we explore how it all happened.

Seoul today is one of the world's largest megacities, and it happened in a bang. The 1950s–1980s were a period of dramatic economic growth, as Seoul experienced the fastest urbanization and modernization project in world history (Lee 2017). Between 1950 and 1970, about a quarter of a million people moved to Seoul proper every year, while the broader Seoul metropolitan area exploded from 4 to 26 million persons by 2000, becoming home to half of Korea's entire population. Seoul rapidly transformed from a war-destroyed rubble-field of the 1950s to become one of the most technologically advanced and powerful economic engines on earth. The city has now become the financial, governmental, and cultural center of a nation on the rise. Though only 28th in population, South Korea in 2022 was the world's top producer of LCD panels/flat screen TVs, the top producer of large ships, the 2nd largest producer of semiconductors, the 3rd largest smartphone producer, 5th largest steel producer, 5th largest total exporter, 7th largest auto producer, 9th largest holder of gold reserves, and 10th largest economy in the world.

Seoul is at the center of this dramatic transformation, but the Seoul story has not always been positive. Passing through the shock-growth phase of extremely compressed economic development after the Korean War, Seoul by the 1990s had come to feature all the usual "wicked problems" facing massive cities worldwide. The number of motorized vehicles in Seoul grew 60-fold between 1973 and 1988, bringing average

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traffic speeds to a crawl (Chang et al. 2017). Seoul air pollution (e.g., suspended particulates of S02, black carbon, and methane) came to substantially outpace ambient air quality standards for healthy living. Total municipal waste during this period quadrupled as Seoul's per capita waste generation became highest in the world. The city ultimately featured the largest urban landfill on earth, with toxic waste heaps reaching 400 feet high in the very center of the city. Waterways also became polluted. In 1989, 10 million tons of sewage and 6.5 million tons of industrial wastewater were discharged into natural waterways every day, mostly around Seoul (Rhee 1991). An increasingly hyper-competitive, neoliberal landscape took hold in the city in the 1990s, led by a wave of International Monetary Fund (IMF)-induced "restructuring" after Korea's 1997 economic crisis, resulting in mass layoffs and a shattering of Korea's middle class. Bluntly put, Seoul by the 1980s and 1990s was unpleasant: dirty, congested, and increasingly polarized.

1.2 Urban Pessimism: The LA School and Beyond

Seoul's situation by the 1990s raised the question: can a megacity like this ever be an environmentally sustainable and socially healthy place to live? It is common to pessimistically think of megacities as resource-consuming monstrosities: endlessly sprawling, unsustainable and unhealthy. Arellano and Roca (2012, p. 3) argue that megacities are the sprawling and unsustainable result of "a model based on consumerism as a premise, a predator of space and natural resources as a result." Goetz (2019, p. 701) similarly argues that "people who live and work in the major cities of the world are faced with increasing levels of congestion, delays, total travel time, costs, frustration, accidents, and loss of life." In yet another dark vision, megacities have been characterized as hyper-competitive, socially polarized hothouses. Elvin Wyly describes many of today's largest cities as "dangerous new frontiers of human ecology that reproduce the social-Darwinist form of society…[akin to] colonial-settler waves of violent dispossession" (Wyly 2015, p. 2515). One review of megacity literature concludes that most current urban development trends are moving in the wrong direction, rendering "contemporary patterns of urbanization discouraging for those concerned about sustainability, social equity, and ecological integrity" (Sorenson and Okata 2011, p. 4). Even though many cities are finding ways to reduce their negative ecological impacts, "in a profound sense, megacities are inherently unsustainable, with their vast consumption of resources drawn from distant 'elsewheres' and their equally vast production of wastes that are routinely exported elsewhere" (Sorenson and Okata 2011, p. 5).

Such bleak diagnoses are especially alarming, considering the inescapable importance of urban dynamics for our common fate. For better or worse, the planetary future will be worked out in cities. Most of the world's populace now live in cities; by 2050 nearly 70% of the planet's population will be urban (United Nations 2018; Sorenson and Okata 2011). From a pessimistic perspective, world urbanization presages a dystopic future of over-consumptive excess, economic polarization, and impending social and environmental collapse. This "Blade Runner" vision of dystopic, polarized cities has sometimes been called the "Los Angeles School" of urban studies—a dark approach to the urban future made famous by Mike Davis in influential texts like *City of Quartz* (1990) and *Planet of Slums* (2006). In this approach, modern world cities are presented as decentered, ungovernable, socially fractured, hyper-consumerist, and darkly individualistic: Los Angeles is often called the paradigmatic case (Arellano and Roca 2012). City dynamics are described as "selfish, criminal, or downright evil" (Bridges 2011, p. 79) and scholars of this "LA School" bent typically show a "lingering pessimism about the future of urban life" (Erie and Mackenzie 2011, p. 104).

Certainly, many world cities offer much to be dystopic about. Consider just the American scene. Any examination of the anti-ecological conspicuous consumption of California's gilded