Preface

After a half-century of economic stagnation and population loss, signs of an American urban renaissance have become evident in the 2010s. Long maligned as dangerous and polluted, cities have in recent years experienced dropping crime rates and are increasingly popular as laboratories for sustainable development. Though the revitalization trend is new and potentially transient, city planners, administrators, politicians, and urban activists are enthusiastically embracing this increase in popularity and promoting cities as vibrant centers for diversity, cultural exchange, and social/political innovation.

What Is a City?

Size matters in cities. While definitions vary, the size and density of a population is one of the primary characteristics dividing cities from towns and villages. According to the United States Census Bureau (USCB), any community with a population of more than 50,000 people is defined as an "Urbanized Area (UA)," while communities with 2,500–50,000 residents are called "Urban Clusters (UCs) and communities with fewer than 2,500 are classified as "rural." When the Census Bureau first began distinguishing urban and rural areas, any community with more than 2,500 was considered "urban," but the subsequent growth of suburbia since the 1950s necessitated new definitions. The Census Bureau's Office of Management and Budget makes another population distinction between "metropolitan" areas, which are defined by having a "core" urban area with more than 50,000 residents, and "micropolitan" areas, which have urban cores of between 10,000 and 50,000.[1]

In practice, communities with less than 50,000 residents have little in common with America's largest cities like New York (pop. 8.4 million)[2] or even smaller cities like Raleigh, North Carolina (431,746).[3] Though difficult to define, the urban feel that has come to define "cityhood" in the American imagination is largely a matter of population density. The size and density of the population causes cities to grow vertically, with families and individuals living close together in more diverse communities and a unique aesthetic in the form of the city skylines. Vibrant downtown districts provide urban residents with access to diverse dining, artistic, and recreational options, which in turn inspire more and more new residents to come to cities looking to expand their social, cultural, artistic, and professional experiences through the unique urban milieu. From a qualitative, rather than quantitative perspective, the density and diversity of urban populations gives cities a sense of vibrancy, with an ineffable energy and dynamism that has come to represent the visceral feel of city life.

Another way to define cities is in terms of "importance," which can be measured in a variety of ways. While cities have long been important in terms of economic influence and as administrative centers for government, cities are also hubs for culture. From the metropolitan art and theater scenes to the numerous linguistic, recreational, and artistic innovations created within diverse urban populations, cities set the tone for cultural development around the nation. Though cities have

changed through decades of growth and decline, the importance of cities as hubs for cultural development has endured, and today, cities are leading a new phase in human culture: the digitization revolution and search for sustainable development that are determining the shape of the next era in both urban and American life.

History and Development of Cities

Archaeologists have found evidence of the first "cities" in remnants from the Nile Valley, Indus Valley, and Mesopotamia as early as 7,500 years ago. The ancient city of Babylon, for instance, housed a population of at least 250,000, while ancient Rome (between 400 BCE and 100 CE) had a population as large as 650,000.[4] The earliest cities were cultural and economic centers, established and developed to facilitate travel and commerce between agricultural centers. Until the mid-1800s, only an extremely small portion of the population, usually estimated at between 4 to 7 percent, lived in cities. The Industrial Revolution, a series of economic and labor developments inspired by new discoveries in manufacturing and technology, drastically changed the demographic environment of the United States. As manufacturing and other industrial jobs became more common in cities, residents flocked from rural areas for work. This growth then facilitated the growth of service industries to provide for growing urban populations. Steam-powered ships and locomotives further fueled the urban boom by making cities more important for shipping and trade.[5]

From the mid-1800s to the mid-1900s, urban communities around the world grew faster than rural communities. Population growth and density inspired vertical growth, leading to the first skyscrapers, and also to the characteristic downtown districts and financial districts associated with cities today. Locomotives and steamships, replaced later with gas-powered vehicles, made it possible for corporations to grow to national scale, selling products manufactured in one area to consumers around the country. This growth continued with the popularization of the automobile and the development of interstate highways connecting cities and towns.[6]

In a phenomenon known as the Great Migration, more than 6 million African Americans moved from the rural South to cities in the North, West, and Midwest between 1910 and 1960. This exodus was motivated by the desire to escape racial prejudice in the South and to capitalize on the growth of urban industry around the country. When African Americans moved into these cities, however, they encountered northern prejudice, and racial tension and conflict ensued.

From the end of World War II to 1975, the United States saw the greatest increase in economic growth in history and a rise in the standard of living and overall affluence. At first this money was concentrated in cities, but with the growth of the highway system and the ability of most white families to own at least one car, many people decided to move to the suburbs and pursue the American dream of houses with yards and white picket fences.

The mid-decades of the twentieth century marked a turning point in American urban history. The "deindustrialization" of the United States in the 1970s, when American companies began to move plants abroad, had particularly adverse effects

on cities, which lost good jobs, the tax base, and people. By the 1980s, American cities had lost nearly a quarter of their peak populations, with a subsequent reduction in economic growth as many companies also moved to the suburbs to seek cheaper property and the labor force of growing suburban populations. Ultimately, this transformation led to urban blight, economic stagnation, homelessness, and poverty in urban areas.[7]

These depressed economic conditions exacerbated racial tensions, and in the 1960s and 1970s, a number of cities, like Cleveland, Detroit, and Newark, experienced urban riots. Racial prejudice and the riots contributed to the mass movement of white families away from American cities into the suburbs, in a phenomenon now called white flight.

Whereas cities were seen as hubs of economic and social opportunity in the early twentieth century, by the 1970s cities were increasingly associated with economic depression and crime. This perception motivated further waves of migration into the suburbs, which in turn increased urban decay. This process continued into the 2000s, with suburban growth outpacing urban growth as individuals raising families continued to move into suburbs seeking safer, cleaner environments or opportunities for employment. Over fifty years, the first suburbs located near city centers became increasingly urbanized and racially diverse, which then stimulated further waves of migration into new suburbs further and further from city centers.

In the 2010s, cities have begun slowly to regain some of their former economic and cultural prominence. In part, the new wave of urban growth has resulted from young adults in the Millennial generation whose interest in living in city centers has led to an urban renaissance. Demographers have also found that older generations, after having raised children in the suburbs, are returning to cities to benefit from the more diverse cultural and recreational options available in urban environments. Population growth alone also leads to urbanization as more and more residents flock to suburbs, thereby increasing demand for "urbanized" housing options and amenities. Therefore, many formerly quiet, semirural communities on the edges of cities have become extensions of residential and business corridors linked to cities. As of 2015, the U.S. population was growing at a rate of 0.73 percent, with a baby born every 8 seconds, and a population of more than 300 million. As this rapid growth continues, both cities and suburbs become more dense and diverse, essentially leading to a convergence between urban and suburban communities.[8]

From Blight to Hope

Though crime in American cities has fallen since the 2000s, public perception has not changed in concert, and a majority of Americans still believe that life in suburbs is superior to life in cities.[9] Changing this public perception is the difficult job of the politicians, developers, and urban advocates struggling towards urban renewal. Demographic trends indicating an increased interest in urban life show that young Americans increasingly value population and cultural diversity; have more interest in the amenities and recreational options of cities; and are more comfortable with

smaller living spaces, congestion, and the other inconveniences associated with higher density.

Capitalizing on the tastes of a new generation of consumers, cities around the nation are working to change public perceptions, investing in downtown revitalization efforts aimed at showing that cities are the ideal "laboratories" for economic, environmental, and social innovation. For instance, urban governments have promoted technological development in cities while also providing tax and other incentives for entrepreneurs looking to revitalize blighted areas or to fill needed niches in the city's services and amenities. Small cities like Pittsburgh, once seen as a polluted, blue-collar city with little appeal to young residents, have invested heavily in green infrastructure, shifting urban environments into increasingly self-sufficient communities where individuals interested in environmental activism and sustainable living are beginning to concentrate.[10] Larger cities like Chicago and Boston have likewise made major steps toward reducing crime; improving quality of life; and investing in sustainable architecture, power, and other infrastructure.[11]

In 2015, it remains unknown whether the urban renewal will be lasting or transient. It also remains to be seen whether the resurgence of interest in urban living will dissipate as more and more young adults begin having children. The current state of cities therefore is one of cautious hope, with urban renewal advocates enthusiastically pursuing development, knowing that the next decade could see a return to previous patterns of decline.

Challenges and Changes

In the nineteenth century, the Industrial Revolution resulted in the massive economic growth of the working and middle classes; in the late twentieth and early twenty-first centuries, the Digital Revolution is once again changing urban economies and creating a proliferation of new jobs, this time particularly in white-collar industries. While urban job markets are growing, digital age industries provide fewer job opportunities due to automation in manufacturing, the shift towards digital rather than physical products, and outsourcing. For instance, the newspaper and magazine industries, having shifted to digital formats and shared content, now employ only 10 percent of their former workforce. Currently, there are few effective strategies for creating working-class job growth, especially in cities where the high cost of living and property values complicate efforts to create economic growth. The plight of the American working class is one of the key issues in the struggle to combat poverty, which is a national epidemic that contributes to crime and decay and affects urban and rural populations alike.

Over the first decade and a half of the twenty-first century, economic disparity has grown, and correspondingly, class conflict has become a prominent issue in American politics and especially in American cities. The Occupy Wall Street protest movement provides an example of popular dissatisfaction with economic inequity in American society and the "wealth gap" between the nation's richest and poorest populations.[12] Likewise, cities have become the main locale for the controversial "education reform" movement, as typified by the growth of charter schools.

For contemporary urbanites, and especially those invested in renewal, fostering new priorities around such key challenges as educational quality, economic justice, and environmental sustainability will be crucial to improving the quality of city life for current and future generations.

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Notes

1. Census Bureau, "2010 Census Urban Area FAQs."
2. "Population-Current Population Estimates," NYC Gov.
3. "Raleigh Demographics," City of Raleigh.
4. Morley, "Population Size and Structure." 42–43.
5. Frey and Zimmer, "Defining the City," 14–16
6. "Rise of Industrial America, 1876–1900," Library of Congress.
7. Jackson, *Crabgrass Frontier*.
8. Schlesinger, "The 2015 U.S. and World Populations."
9. Mathis, "Overall, Americans in the Suburbs Are Still the Happiest."
10. Williams, "Why Pittsburgh Is a Front-Runner in Sustainable Development."
11. Eversley, "Hard-knocks Cities are Working on a Comeback."
12. Moyers, "The Great American Class War."

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Green Initiatives, the Environment, and Natural Resources

The appeal of commuter and leisure cycling has grown, and the Phoenix Spokes People organize awareness and improvement of bicycle-friendly roads through the center of Phoenix. On occasion, the group plans a Bike to the Ballpark ride to see the Arizona Diamondbacks baseball game. The city of Phoenix is embracing the movement with new bicycle lanes and a soon-to-be-launched bike rental network in the center of town. Photographed August 8, 2014.

The Greening of American Cities

Is it possible to create a city that is sustainable and exists in harmony with the surrounding environment? This is the goal of the eco-city, a theoretical model of urban planning and operation that seeks to reduce the environmental impact and enhance the sustainability of urban environments. While engineers, scientists, politicians, activists, and other innovators have been pursuing this agenda since the 1960s, interest in eco-cities has expanded in the twenty-first century as issues like climate change, oceanic degradation, loss of species, and the rising cost of petroleum have pushed environmental issues to the forefront of the public debate.

Environmentalism and the Eco-City Concept

In 1969, a portion of the Cuyahoga River running through Cleveland, Ohio, caught fire, the result of a high level of combustible pollutants floating within the effluent. Though the river had caught fire on numerous other occasions (recorded first in 1868), in 1969, American popular culture was on the verge of an environmental awakening, and the widely publicized event was strange and shocking enough that it became a galvanizing moment in American environmentalism. The Cuyahoga fire inspired the federal government's Clean Water Act, but more important, it inspired hundreds of American citizens to get involved in local environmental issues.[1]

Fossil fuels like petroleum and natural gas, are the products of ancient carbon-based materials (plants, animals, fungus) decomposing within the Earth's crust. Combusting coal, gas, and oil creates heat and energy that is used to create electricity and to power machines. Fossil fuels propelled human society through the Industrial Revolution but environmentalists gradually realized that burning fossil fuels also creates pollution, including "greenhouse gases," like carbon dioxide, that permeate the atmosphere and pollute both the air and water. The gradual realization of the environmental degradation caused by fossil fuels became the primary focus of environmentalism in the 1970s and remains one of the chief environmental issues of the twenty-first century.

The concept of the "eco-city" is often attributed to the nonprofit Berkeley, California, group Urban Ecology formed in the mid-1970s by activist Richard Register.[2] Register and colleagues created urban green projects that included city gardens, tree plantings, urban farming programs, and campaigns against known sources of environmental pollution like automobiles. The organization began publishing the journal *Urban Ecology* in the 1980s and helped to organize the first national and later international conferences for those interested in sustainable urban development.[3]

In the 1990s, Canadian environmentalist Bill Rees coined the term *environmental footprint* to refer to the impact of a person or group on the nonhuman

environment.[4] This led to the idea of the "carbon footprint," which attempts to measure the carbon-based pollutants associated with a person, city, or country. Since the 1990s, "carbon footprints" have become a major focus in environmentalism and the idea of creating "low carbon" or "carbon neutral" cities is central to evolving eco-city concepts.

According to the 2015 sustainable cities report from the Amsterdam-based Arcadis consulting company, no North American city has yet to make it into the "top ten" sustainable cities in the world. However, Boston, Massachusetts (ranked 15), and Chicago, Illinois (ranked 19), provide examples of cities that have made significant strides, incorporating public policy and grassroots initiatives to enhance sustainability and reduce environmental impact.[5]

Getting Out of the Greenhouse

Two of the most significant environmental issues of the modern age are climate change and air pollution, and both are intimately linked to transportation. Environmental Protection Agency (EPA) research indicates that burning fossil fuels for transportation produces 27 percent of greenhouse gas emissions in the United States. Burning fossil fuels to produce electricity is the most significant source, producing more than 67 percent of greenhouse gases.[6] In addition to controversial climate change concerns, greenhouse gases have been demonstrably linked to a variety of health issues including higher levels of cancer; respiratory illnesses; and a variety of minor health concerns like fatigue, cold and flu outbreaks, and nasal congestion.[7]

Air pollution is often higher in urban areas due to the concentration of homes and vehicles. To combat automotive pollution and the peripheral issue of traffic congestion, city governments, environmentalists, and politicians have attempted to encourage alternative modes of transportation, including cycling, walking, carpooling, and mass transit. Both in Europe and the United States, "cycling" for commuting and urban transportation has become a popular trend in the 2010s. The benefits of cycling are considerable, promoting exercise while simultaneously reducing traffic congestion and pollution. Cycling and walking are more popular in cities that have "segregated" or "protected lanes" to protect bicycle and pedestrian traffic from automobiles. In 2015, all 50 states and the District of Columbia had active programs to promote cycling. Among the more innovative efforts are "bicycle sharing" and "bicycle rental" programs that allow commuters to rent a bicycle for temporary use. Philadelphia's "Indego" Bike rental program[8] provides an example, using a combination of corporate and municipal investment to create a network of bike rental stations across the city. [9]

According to the U.S. Census Bureau, the number of commuters using bicycles in the United States doubled between 2000 and 2013 (from 488,000 to 882,198). The enthusiasm of cycling culture gives the impression that urban bicycling constitutes a transportation "revolution," though the actual impact of cycling on traffic is modest. In 2013, less than 2 percent of commuters used bicycles to get to and from

work and estimates indicate that more than three times as many Americans walk rather than using a bicycle for commuting.[10]

Cycling and walking are only viable options for individuals without mobility restrictions and are only useful within a range of environmental conditions. Other alternative transportation methods are therefore necessary and many cities therefore promote mass transit alternatives. In many of America's greenest cities, municipal governments have created programs to decrease the environmental impact of public transportation. In Boston, for instance, the city spent $3.25 million to modify five hundred school buses to reduce carbon emissions. This and similar green initiatives have resulted in Boston being ranked as one the most ecologically efficient cities in the United States.[11] Some cities have considered more radical environmental initiatives to reduce traffic. For instance, city administrators in Hamburg, Germany, have considered plans to ban automobiles completely from the city by 2034.[12] While Hamburg's car-free proposal is a radical example, reducing automobile traffic is essential to creating sustainable cities.

Addressing pollution from the electricity industry is an even more complex issue than combating automotive pollution. The only viable strategy is to invest in the production of alternative energy technology like solar, wind, geothermal, and tidal/wave power. With sufficient investment, the entire energy needs of a nation can be derived from alternative sources. For instance, research from the National Renewable Energy Laboratory suggests that the United States could derive 20 percent of consumer electricity from wind power alone by 2030.[13] U.S. cities lag significantly behind European cities in this regard. In 2014, wind-based electricity exceeded oil-based electricity in Europe, and major cities like London and Copenhagen were aggressively incorporating alternative technology into city planning.

Solar energy production has been increasing in the United States and, between 2000 and 2014, solar energy output increased from 170 megawatts nationwide to over 20,000 megawatts, which is sufficient to provide electricity to more than 4 million average-size homes.[14] Efforts to increase alternative energy production have met with resistance from lobbyists supporting the fossil fuel industry, but have also met with opposition based on a variety of other concerns. For instance, proposals to build an offshore wind power facility 4.8 miles from the Massachusetts coast have been stalled by an influential lobby representing less than 1 percent of the population who object to the project on the basis that the wind turbines will ruin the scenic views for coastal property owners.[15]

Water and Land Management

Another essential step in building eco-cities is protecting the quality of water moving within and through urban areas. This includes metropolitan lakes, rivers, creeks, and coastal areas, but it also applies to sewage and rainwater. Cities are nodes of pollution and produce thousands of gallons of waste that filters into natural reservoirs and water systems. To combat this, the Environmental Protection Agency has created a list of recommendations, called "green infrastructure," for urban businesses, property owners, and governments interested in water preservation. The EPA's

green infrastructure programs include botanical installations, such as planting trees and plants in key areas and preserving, restoring, and protecting ecosystems essential to water management like flood plains, swamps, and wetlands. In addition, the EPA recommends a variety of architectural modifications, like permeable pavement and the installation of rain barrels, that can help to preserve water.[16]

Rain barrels, PVC or wooden barrels that capture rainwater and runoff, provide an example of a relatively simple device that has a major impact on water preservation. EPA reports indicate that a single rain barrel can save a homeowner 1,300 gallons of water during peak summer months, and can be used to water plants or lawns or for a variety of other uses. The EPA also recommends installing green roofing, in which a portion of a rooftop is covered in a waterproof membrane and used for planting grass or other plants. Green roofing saves energy by insulating buildings, reducing air pollution, and helping to purify rainwater before it infiltrates the soil and flows to nearby bodies of water.[17]

Strategic urban planning can also have a significant positive impact on the biological diversity of urban ecosystems. For instance, when planting trees or plants, environmentalists recommend choosing native species that are known to occur naturally in the area. Landscaping with indigenous plants provides microhabitats for native animals and oases that can help to allow migratory species to move through, rather than around, cities.[18]

Another innovative use of urban space is the creation of urban agriculture programs in which community lots, rooftop space, and urban yards are used to grow food rather than decorative plants. The U.S. Department of Agriculture studies in 2011 and 2012 indicate that undernourishment is a significant problem in American cities as urban residents often live in food deserts without affordable access to healthy fruits and vegetables.[19] The urban agriculture movement seeks to address this issue by transforming unused or underutilized space into productive agricultural centers. Urban agriculture also increases green spaces that reduce pollution, utilize and preserve rainwater, and contribute to better air quality. Innovative programs like urban beekeeping and rooftop gardens to supply restaurants provide examples of how the creative use of space is contributing to an emerging evolution of the eco-city concept.

Building eco-cities is a long-term goal and the United States, though progressing toward sustainability, lags behind many European and Asian cities in terms of energy and infrastructure investment. With global environmental issues like climate change looming and population growth leading to increased congestion, demand for resources, and pollution, popular interest in sustainable development has never been higher. It remains to be seen however, how long it will take for environmental concerns to inspire the difficult, substantive economic and legislative changes needed to create truly sustainable cities.

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