CHAPTER 7

Why Has Sprawl Spread?

The streets of downtown Houston feel eerily reminiscent of downtown Detroit. Neither city has the pedestrian life of New York, London, Boston, or San Francisco. You wouldn't know from strolling the streets that while Detroit practically defines decline, Houston remains a great boomtown. The Houston metropolitan area had a million more inhabitants in 2009 than it did in 2000, making it the third-fastest-growing metropolitan area in the country, after Atlanta and Dallas.

To see Houston's masses of people, you have to leave the downtown and go elsewhere, like the Galleria shopping mall on the city's western edge. Twenty-four million people visit this 2.4-million-square-foot complex each year, making it the city's most popular attraction. On any given Saturday, the mall is mobbed with shoppers, tourists, and people just enjoying its public spaces. Even in sprawling Houston, the desire to experience density doesn't disappear. The Galleria has citylike features—plenty of pedestrians, offices, apartments, an ice-skating rink. The mall was, after all, modeled on hallowed urban space: Milan's Galleria Vittorio Emanuele, diagonally across the main square from the Duomo, the Milan Cathedral. But unlike its Milanese predecessor, the Houston Galleria is comprehensively air-conditioned, walled off from the outside world, and surrounded by vast garages.

Almost all of Houston is built to accommodate heat and cars. Arguably, the defining characteristic of American cities built in the late twentieth century is their accommodation of the automobile. Just as the winding streets of Bruges or Boston were designed around pedestrian pathways, and New York's grid supported the omnibus, today's newer cities reflect the dominant form of

transportation of our age: the car. Car-loathers may detest Houston, but millions of Americans who enjoy driving, warmth, and big, cheap homes find the place pretty attractive.

Many of our most "progressive" states and cities, supposedly the great champions of those with modest means, have become the least hospitable places for middle-income Americans. In the Northeast, large minimum lot sizes mean that the average single-family home in 2008 sat on more than an acre, more than twice the national average. By contrast, the deep red state of Texas is far more affordable, not because the state is pro-poor, but because it isn't anticonstruction. Sunbelt sprawl would attract millions even without benighted local housing policies, but it doesn't help that older cities are foolishly turning people away.

I lived in older urban areas—Manhattan, Chicago, Washington, D.C.—for thirty-two of my first thirty-seven years on this planet. My only nonurban experiences were in college towns, like Princeton and Palo Alto. I had walked to work almost every day of my life. But then I was blessed with three usually delightful children, and I did what millions of other Americans have done facing an expanding household. I moved to a suburb and started driving.

There is nothing unusual in a middle-aged man leaving the city. As we've seen, cities disproportionately attract the young. Almost one fifth of Manhattan's residents are between the ages of twenty-five and thirty-four, while only 13 percent of the nation is in that age category. Still, given my love of cities, my decision to suburbanize deserves a bit more explanation. What terrible bout of insanity induced me to choose deer ticks as neighbors instead of people?

I remain unsure about whether my suburbanization was a mistake, but there were logical reasons for the move: more living space, spongy lawns for toddlers to fall on, my desire for a less Harvard-dominated neighborhood, a reasonably fast commute, and a good school system. Leaving the city meant an end to excellent accessible restaurants, but with three small children, I wouldn't be eating out often no matter where I lived. Thanks to the Massachusetts Turnpike, it doesn't take me much longer to get to the things in Boston that I value most: cannoli in the North End, Flemish painting in the Museum of Fine Arts, and Logan Airport.

This chapter is about precisely that type of calculus—the appeals of car-based living in lower-density places, which have attracted so many people,

including myself. Older cities must compete against car-oriented areas, and it always makes sense to know your enemy. Ranting about the philistinism of people who choose car-based living in Houston may be emotionally satisfying to some, but it does nothing to help older cities attract more people. For millions, the appeal of suburban, Sunbelt places is real, but better policies, both at the national and local level, could enable older cities to compete more effectively.

Whether you or I love or loathe the exurbs should be irrelevant for public policy. The government should not be in the business of enforcing lifestyles that we happen to find appealing. The government's job is to allow people to choose the life they want, as long as they are paying for the costs of that lifestyle. Yet today, public policies strongly encourage people, including me, to sprawl.

I doubt that I would be in the suburbs if it weren't for the antiurban public policy trifecta of the Massachusetts Turnpike, the home mortgage interest deduction, and the problems of urban schools. Eliminating pro-sprawl policies won't bring back every declining city, and it won't kill the suburbs, but it will create a healthier urban system whereby walking cities can compete more effectively against the car. The stakes are even higher in the developing world, where cities are more fluid and where a wholesale move to American-style sprawl would mean a massive rise in driving and energy use.

Sprawl Before Cars

Transportation technologies shape our communities, and modern sprawl is the child of the automobile. The connections that define cities have always entailed some form of transportation. Sprawl isn't the opposite of urban density; rural isolation has that distinction. The people who live in sprawling exurbs have access to neighbors, stores, employers, and restaurants. They just have to drive. Sprawl began many centuries ago, when people started using something other than their own feet to travel, and since then boats, horses, omnibuses, elevators, subways, and cars have all influenced how cities were laid out and how they grew. Many older neighborhoods, like New York's Washington Square and Barcelona's Eixample, which are now beloved by urbanists, were the sprawl of earlier eras.

Each successful new type of transportation generally goes through three phases. First, technological breakthroughs enable the large-scale production of a faster way to move, such as a steam-powered train or a car. Second, a new transportation network is built, if needed, to accommodate this new technology. Third, people and companies change their geographic locations to take advantage of this new mode of transport.

The first transport revolution was the domestication of pack animals ten millennia ago, which seems to have started in the Middle East. Pack animals didn't require a new road network, for horses, donkeys, mules, and llamas can go pretty much anywhere a human can. But the pack animals did change human geography. The urban historian Paul Bairoch argued that before them, moving food was so hard that people *had* to live near food sources. Pack animals made cities possible, by making it easier to transport enough food to feed concentrated urban masses.

Wheels seem to have originated in Mesopotamia around eight thousand years ago, but the oldest existing wheel is five thousand years old and Russian. Egyptians and Indians had the wheel by at least 2000 B.C. As anyone who has ever been on a dune buggy knows, wheels don't need paved roads. Still, roads really speed up wheeled transport, especially in places without flat, dry ground. The Incas never developed the wheel, quite possibly because pack animals functioned better in the mountainous terrain of the Inca Empire.

Building and maintaining roads requires strong and wealthy civilizations. Good transportation brought far more honor and wealth to Rome than the bloody pageantry of the Colosseum. The empire's large cities were sustained by the wheeled transport that distributed vast amounts of grain brought by ship from Spain and Egypt to feed the nonfarming urbanites. Inside cities, Roman grids accommodated wheeled carts. After Rome fell, the ability to maintain roads disappeared, and without roads, wheels lost their value. The pack animal came back. Paving returned with centralized political power in the High Middle Ages, when leaders like Philip Augustus, the great consolidator of France who pushed the English out of Normandy in the thirteenth century, started paving Paris for the first time since the Roman era.

Much ink has been spilled about medieval innovations in horse travel, such as the stirrup and the saddle, which increased the importance of earlier equine

innovations, like the breeding and training that enabled humans to ride horses at least five millennia ago. But throughout most of history in the densely populated, non-nomadic parts of the world, horses have been an elite transport technology. Maintaining a large life form for personal transport was far beyond the means of most ordinary farmers or townsmen. Horses only began transporting large numbers of people when their costs could be shared, through mass transit.

In philosophical circles, Blaise Pascal is known for his reflections on Christianity, while mathematicians know him for his contributions to geometry and probability theory. Pascal's famous wager, which suggests that if there is any chance that God exists, then it makes sense to be good, is still the stuff of undergraduate bull sessions. Among urbanists, however, his glory comes from being a father of the bus. In 1662, Pascal organized the first public bus line, charging five sous for the privilege of being carried by horse across Paris.

Pascal's public buses were, appropriately enough, a gamble that required sufficient scale to be a good bet. Running a bus route along a fixed line only makes sense if there are enough customers. Seventeenth-century Paris had the paving and the population to make a bus line possible but not actually successful. The real era of bus transit began in the 1820s, when city populations had expanded dramatically, and horse-drawn buses started appearing in Paris, New York, and London.

The first public transit in New York City was a twelve-person omnibus that ran along Broadway in 1827. The poor quality of New York City's roads slowed the bus down, so its owner laid down rails. Over time, a rail network was built to carry those horse-drawn omnibuses. It was paid for by private operators, but it was also subsidized, as the city gave them right-of-way on previously open city streets.

A half-hour commute on foot can bring an average walker only about 1.5 miles; the omnibus easily doubled that range, which enabled the growth of uptown neighborhoods that catered to the well-off. An omnibus ride may have cost only five to seven cents, but ordinary laborers earned only a dollar a day, so they kept walking. Like the car, buses started off as transportation for the prosperous. By selectively speeding the rich, buses began the exodus of the wealthy from the urban core. When everyone walked in New York, the rich

lived in Bowling Green, a central location with easy access to the wharves. After the omnibus, the prosperous were able to commute in from less dense quarters uptown, and the suburban pattern started.

There is a clear demarcation between the older areas of New York and Boston, with their chaotic, unplanned streets built during the pedestrian era, and the much more orderly city built around wheeled transport. The fifty-foot minimum street widths and straight lines of New York's 1811 grid were designed to accommodate masses of horse-drawn vehicles, even those, like the omnibus, that hadn't yet shown up in New York.

Before the bus, the land that is now the southern end of Fifth Avenue had been one of the poorest parts of the city, an early African-American district and cemetery. In 1826, the city bought a big plot of land in the area, Washington Square, and turned it into a marching ground. With the omnibus, this once almost rural outpost became a quite plausible home base for well-to-do merchants to commute from. Wealthier New Yorkers built stout row houses that still stand, enjoying their views over the city's green acres. Washington Square, now an archetypal urban space, was then a proto-suburb, a place that grew because a faster form of transportation enabled the rich to travel farther and buy bigger homes with more land. In the 1950s, when Jane Jacobs fought against running a road through Washington Square Park, she was fighting to save nineteenth-century sprawl from twentieth-century sprawl.

The next step after the omnibus was to power carriages with something other than equine muscle. Matthew Boulton understood that the steam engine could move wheels, and Richard Trevithick built the first functioning train in 1804. As steam engines became more reliable and coaches more comfortable, entrepreneurs started laying down rail networks. Intra-urban systems were built on existing roads, in tunnels, and on elevated rails. Building at street level was cheap but used valuable city real estate and created lots of noise and smoke. London, the world's largest city, with the greatest demand for faster transport, pioneered the underground rail system in 1863. More than twenty-five thousand people started using it almost immediately.

Running steam engines in tunnels may be better for pedestrians, but it isn't great for the riders sitting in smoky cars. New York City, which also had plenty of demand for its streets, went for elevation rather than tunnels. The city's

subways didn't appear until 1904, more than thirty years after steam trains traveled above Manhattan. Tens of millions of dollars were invested in elevated rail networks, which were run by some of the most infamous figures of the Gilded Age, like Jay Gould and Charles Yerkes.

Those rail networks enabled New York City to sprawl farther. The northern stops on the Manhattan elevated train lines initially attracted tourists eager to see the island's relatively uninhabited upper reaches. The elevated railroad made it possible to live in neighborhoods like Harlem and commute at the rapid rate of 12 miles per hour to jobs downtown. My grandfather grew up in one of those northern Manhattan neighborhoods made accessible by the El. From one perspective, the steam train–enabled growth of the nineteenth-century city looks like a great burst of urban expansion.

But those steam trains were also creating early suburbs. If Washington Square is the sprawl of the omnibus era, then the Philadelphia Main Line provides the quintessential examples of suburbs built on steam. In the 1860s, the Pennsylvania Railroad acquired 283 acres in Lower Merion Township, on which it created the town of Bryn Mawr. At first, the new homes were weekend houses, but as trains got faster, a new form of suburban living came into being. Just as Washington Square housed the elite New Yorkers described by Henry James and Edith Wharton, the Main Line provided homes for the wealthy Philadelphians played by Cary Grant and Katharine Hepburn in *The Philadelphia Story.*

Werner von Siemens took the next step by powering an urban train with electricity in Berlin in 1881. No horses. No steam. Just gliding trains powered either with an overhead cable or with a third rail underneath. Electricity proved a perfect fit for mass transportation in densely populated cities, but electric streetcars and trains required two networks, one to ride on and one to provide power. Frank Sprague was, like Henry Ford, a brilliant mind collected by Thomas Edison. Also like Ford, Sprague left Edison and transformed city life with his transportation innovations. He invented the trolley pole, which brought electricity to cars throughout the city via a network of overhead wires. By the late 1890s, urban landscapes were full of trolleys. Siemens and Sprague helped cities move up as well as out. Siemens invented the electric elevator; Sprague co-invented the Sprague-Pratt elevator, which ran more

swiftly and safely. Even though trains and streetcars lowered the price of traveling into the city center from far away, the late nineteenth century saw cities stretch up as well as out.

Electric streetcars, like the earlier omnibuses, shifted population within cities worldwide. The Passeig de Gràcia, in Barcelona, is one of the most architecturally important streets in the world, with masterpieces by Antonio Gaudí, Josep Puig, and the other greats of Catalan architecture. The Passeig, a broad, beautiful thoroughfare, runs outward from the Plaça de Catalunya, on the edge of the old city, through the Eixample, a nineteenth-century district made possible by streetcars. The Eixample was outside the old city's walls, but when those walls were torn down in the 1850s, the city held a competition to create a plan for a new district. The competition was won by Ildefons Cerdà, a civil engineer, who planned the area's octagonal blocks. While New York City's grid is detested by many urban planners for its plodding uniformity, Cerdà's plan is celebrated for its quirky creativity. He designed it to accommodate transportation innovations: Those octagons were meant to enable the turning of large, steam-powered vehicles.

The Eixample was first reached with horse-drawn carriages, but in 1900, the streetcars that ran down the Passeig de Gràcia were electrified. The new transportation made the area a magnet for prosperous Catalans who paid the city's best architects to design their homes. The Casa Milà, an undulating masterpiece by Gaudí, was built for a developer who was known for dressing and marrying well. Another architectural icon, the Casa Amatller, was built for a chocolate magnate.

While the nineteenth century saw several transit innovations, the twentieth-century city was dominated by one: the internal combustion engine. Germans Nikolaus Otto, Gottfried Daimler, and Wilhelm Maybach, connected by the city of Cologne, produced the four-stroke internal combustion engine and used it to power the world's first gas-powered motorcycle in 1885. In Mannheim, 120 miles away, Karl Benz developed his own gas-powered two-stroke engine, and in 1886 he patented his Motorwagen. While Germans were responsible for the key innovations in producing the automobile, Americans, especially Henry Ford, deserve the credit for mass-producing cars. By the end of the 1920s, Americans had 23 million cars on the road. Cars, unlike trains, functioned reasonably well on the existing roads, which were already being converted to

asphalt in the nineteenth century. Henry Ford's Model T's were sturdy vehicles, simple enough to be repaired by ordinary people, and they traveled easily at modest speeds even on dirt.

But drivers soon realized that cars could run much more quickly on limited-access highways with smooth asphalt paving. America began building a highway network to accommodate the new form of transportation. New York State opened the first part of its parkway system in 1908. That system was meant to give drivers easy access to the city at the soaring speed of 25 miles per hour. By the 1920s, the federal government started organizing and funding a system of paved roads throughout the nation. The Federal Highway Act of 1921 provided $75 million of matching funds ($765 million in 2007 dollars) for state highway projects, such as the parkways built on Long Island by Robert Moses, New York's master builder (and Jane Jacobs's bête noire), who was also one of the world's great experts on and advocates of limited-access highways. During the Great Depression, the New Deal put people to work paving highways, such as Route 66, immortalized in song by Bobby Troup and Nat King Cole, and in prose by John Steinbeck. The Okies in *The Grapes of Wrath* traveled to California along the "Mother Road."

President Eisenhower dramatically deepened the federal government's commitment to highways—a commitment that lives on to this day. Mobility is often crucial to military success, which may explain why generals are often keen on improving transportation. General Washington was passionate about canals, and General Eisenhower loved highways. With some cause, the Eisenhower Interstate Highway system has been called the largest public works project in history. Today, the system includes forty-six thousand miles of roads, built and maintained with tens of billions of dollars of federal and state spending. The vast scale of federal support for the highway system has led some to see a devilish conspiracy of automakers who used public funding to destroy the streetcar. Certainly automobile manufacturers, like most other firms, wanted to defeat their competitors, who happened to run buses and streetcars. But if there was a conspiracy, then it operated in full view and with abundant popular support. Americans loved their cars and were happy to spend billions creating a fast network of highways.

If Henry Ford's assembly lines were the first phase of the car era, and the highway system was phase two, then mass suburbanization and the rise of

car-oriented cities has been phase three—the population's response to the new transport technology. Income and population growth have been significantly higher in those metropolitan areas that were included in the highway system. Suburbs grew more quickly in areas with more roads, and cities emptied. Nathaniel Baum-Snow, a Brown University economist, has calculated that each "new highway passing through a central city reduces its population by about 18 percent." One potential problem with such calculations is that more highways may have been built in areas that expected more suburbanization, but Baum-Snow handles this problem by focusing on the highways that were planned in 1947 for military purposes. Like omnibuses and streetcars, the automobile reshaped urban America.

America had begun to reorganize its cities in response to the car in the 1920s, but in those years, car-based living in the suburbs was still expensive for ordinary Americans. Even Fitzgerald's Nick Carraway, a poor man relative to Jay Gatsby but much richer than most, took the train in from Long Island, at least when he wasn't being driven by beautiful, feckless golfers. The process of mass suburbanization was stalled by the Great Depression and World War II, but it began in earnest when veterans started coming back from the war.

William Levitt and Mass-Produced Housing

One of those veterans was a lieutenant in the Seabees named William Levitt. Levitt, the son of a British-born lawyer, was born in New York in 1907. He dropped out of New York University to get into construction with his brother Alfred, who became the designer while Bill took care of the business side of the operation. Together they built two thousand homes in the 1930s, mostly for rich clients on Long Island. Levitt began experimenting with large-scale housing for middle-income Americans, but his early efforts produced decidedly mixed results. His sixteen-hundred-shack project in Norfolk, Virginia, built before World War II, still had unsold units in 1950.

After the war, Levitt was determined to become the Henry Ford of the building business, creating an inexpensive product on a vast scale. Together with his father and brother, he assembled almost twenty square miles of land near Hempstead, Long Island. Potato farmers got rich as Levitt pushed prices

from $300 to $3,000 an acre. Levitt wasn't going to bottom-fish, as he had in Norfolk. He was building a high-quality product, at least for its time. The homes had modern appliances and sturdy construction. He master-planned the community. It had, and has, parks and schools and plenty of green space.

Although the result—Levittown—drove highbrow critics like the *New Yorker*'s Lewis Mumford to fits of literary condescension, the town's low prices and relative opulence made it wildly popular with ordinary folks. The critics may have been right in decrying the endless monotony of similarly styled ranch and colonial buildings, but tenements were hardly architectural masterpieces either. More important, as the sociologist Herbert Gans wrote in his description of Levittown life, critics write from a "tourist perspective" that prizes "visual interest, cultural diversity, entertainment, esthetic pleasure, variety (preferably exotic), and emotional stimulation." A typical resident who bought in Levittown wanted "a comfortable, convenient, and socially satisfying place to live—esthetically pleasing, to be sure, but first and foremost functional for his daily needs." Architectural experts do tend to value stylistic sophistication much more than most home buyers. Appreciating art is, after all, the experts' job. But home buyers, unless they are very rich, tend to put more weight on floor space, lot size, modern conveniences, good schools, and access to jobs.

Like Ford, Levitt fought ferociously to cut costs. He shut the unions out, which brought on the picket lines. One possibly apocryphal story told of a picketer who liked Levitt's houses so much that he bought one. Avoiding unions made it possible for Levitt to use the latest building technologies, like spray painting, which violated make-work rules. He bypassed middlemen and bought everything from lumber to televisions directly from the manufacturers. He set up his own nail-making plant. Home production was broken down into twenty-six separate steps and farmed out to scores of subcontractors. To this day, mass production remains a key reason why new homes in growing suburban areas are much less expensive than bespoke houses built in older places. By building thousands and thousands of homes quickly in one area, Levitt was able to sell a comfortable modern house for less than $8,000 in 1950, less than $65,000 in 2009 currency.

Levitt's average home buyer earned about half that amount per year. Few of them would have had eight grand to put down for a new Levitt house, but

the federal government was splurging on housing subsidies. The GI Bill offered no-down-payment housing loans for veterans, and the Federal Housing Administration (FHA) guaranteed up to 95 percent of mortgages for middle-income buyers. With a government-guaranteed loan, Levitt's buyers only needed to come up with $400 to buy a home packed with modern appliances and surrounded by leafy space. Levitt's eight-hundred-square-foot ranch houses now seem tiny and quaint, but to New Yorkers who had grown up in crowded tenements, they were the McMansions of their day.

Neither federal housing policies nor interstate highway spending were designed to be antiurban, but they certainly hurt cities. The highway program was meant to connect the country, but subsidizing highways ended up encouraging people to commute by car. Encouraging home buying through the home mortgage interest deduction and government-guaranteed mortgages was meant to correct alleged imperfections in the mortgage market and create property-owning citizens with a stake in their country. The biggest public home-ownership subsidy of all ended up being the tax deductibility of mortgage interest, which began not as a housing policy but as a by-product of the general deductibility of interest expenses—an almost accidental part of the income tax code that has ended up having a huge impact on the way we live. Subsidizing the purchase of big houses ended up encouraging people to leave the cities. FHA loans went disproportionately to middle-class enclaves in the suburbs, perhaps because those areas seemed like good bets to FHA administrators or perhaps because this was where new homes were being built. The government wanted to reward veterans with bigger homes, but those bigger homes tended to be suburban. Owner-occupied houses are overwhelmingly single-family houses, and they tend to be in suburbs. When public policy promotes home ownership, it also pushes people to leave cities.

When Levittown was built, in the 1940s, access to public transportation was still important to residents. The town had a train station, and many Levittowners rode the rails to their Manhattan jobs. But American suburbs were coming to depend on the car far more than older, higher-density areas like Barcelona's Eixample. In Levittown, residents still needed a car to get to the train station or to run errands around town. Moreover, plenty of early residents carpooled to get to work, still a common practice, albeit one now used largely

by the less wealthy. Still, Levittown was a hybrid: a town that required a car for local driving but that still connected with trains for longer-distance travel.

Rebuilding America Around the Car

As master-planned suburban communities followed the path of William Levitt, they increasingly dropped the connection with public transit altogether. In the growing areas of Sunbelt sprawl, businesses are dispersed throughout the area rather than centralized in a single downtown. Almost half of the jobs in America's ninety-eight largest metropolitan areas are more than ten miles away from the city center. People do their shopping in malls built around the car, rather than in conventional downtowns. Cheap trucks and highways freed firms from ports, railway depots, and the Great Lakes system.

Car-based suburbs are the latest installment in the move to sprawl that started in Washington Square and Eixample, but car-based communities feel very different from every older area. All of the previous transport innovations still required some walking. You had to get by foot from the bus stop or train station to your job or home. The presence of foot traffic kept the older communities fairly dense. But the car changed all that. By eliminating the need for walking, the car supported a quantum leap in the size of land areas that people could occupy. As a result, the inverse connection between density and car usage is extremely strong—across a broad range of cities, as density doubles, the share of the population that takes a car to work typically drops by 6.6 percent.

Cars also need much more space than omnibuses or elevated rail lines or walking. Nine square feet of road space is plenty for a pedestrian walking down Fifth Avenue, and on a busy day, walkers will put up with much less. The Honda Accord, a modest-size car, takes up about a hundred square feet on its own. If that car is going to have a couple of feet around it and several car lengths ahead of it, its space needs can easily increase to three or four hundred square feet on a highway. The fortyfold increase in space that accompanies the shift from walking to cars explains why so much of the land in car-based cities is given over to highways.

And cars don't use up space only when they're hurtling down the asphalt.

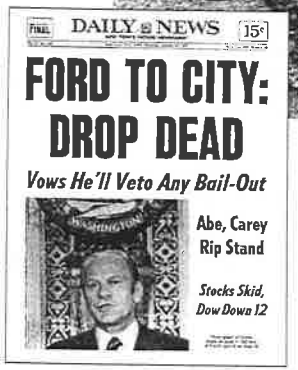
They also require space when they're standing still. A typical parking space can often be more than 120 square feet—about the size of a standard work cubicle. Bringing a car to work essentially doubles the amount of space that someone needs on the job. In older, dense cities, that space requires structured parking, which can cost more than $50,000 per space to build.

The mismatch between the car and the world's dense older cities explains why cars have led to the construction of vast new low-density living spaces, sometimes on the edge of older cities and sometimes out on their own in the middle of the Sunbelt. Even the shifts in the late nineteenth century, when skyscrapers rose higher and streetcar suburbs were built, seem small relative to the massive creation of spaces built around the automobile.

Some have suggested that American sprawl represents an English cultural heritage that puts an outsize value on single-family detached houses and backyards, but there are obvious reasons why Europeans have remained more urban than Americans. Many European cities are old and enjoy the architectural legacy of centuries of genius. Living in central Paris is fundamentally different from living in most American central cities. European governments slowed the advance of the automobile by taxing gas more heavily and spending less on highways. The average gas tax in France over the past thirty years has been about eight times higher than average gas taxes in the United States. In the mid-1990s, when the average price for a gallon of gas in the U.S. was close to $1, the average price per gallon in Italy or France was close to $5.

Comparing seventy cities worldwide, Matthew Kahn and I found that when countries move from having low gas taxes to high gas taxes, the density of development increases by more than 40 percent. Vehicle ownership, unsurprisingly, falls as well. Despite higher gas taxes, as Europeans have gotten wealthier, they've started driving more like Americans. Today, 84 percent of passenger transport, by mile, in France is done by car. In Italy there are about 6 cars for every 10 people; the comparable numbers for France and Germany are 5 and 5.66. The United States still has more cars—there are 7.76 cars for every 10 Americans—but the gap is narrowing considerably.

As European car ownership has increased, Europeans have also moved to the suburbs. Cars, not culture, are the root of sprawl. A report from the European Environment Agency notes that since the 1950s, more than 90 percent of the new construction in cities like Vienna, Marseilles, Brussels, and Copenha-


DAILY NEWS 15¢

FORD TO CITY: DROP DEAD

Vows He'll Veto Any Bail-Out

Abe, Carey Rip Stand

Stocks Skid, Dow Down 12

Cities are so monumental that we easily forget how fast they can fall—and rise. In the 1970s, New York verged on bankruptcy; President Ford refused to bail it out (left), and President Carter toured the grim ruins of the South Bronx (above). Three decades before these iconic images, Gotham had been an urban paragon, and three decades after them, it is again.

[Art 1:] New York Daily News *Archive / Getty Images*
[Art 2:] Teresa Zabala / The New York Times */ Redux Pictures*

The MindTree campus in Bangalore is a pristine and elegant flat-world phenomenon that thrives by connecting smart people from India and around the world. *MindTree Ltd.*

A market in Bangalore is neither pristine nor elegant, but it is an exciting explosion of human energy.

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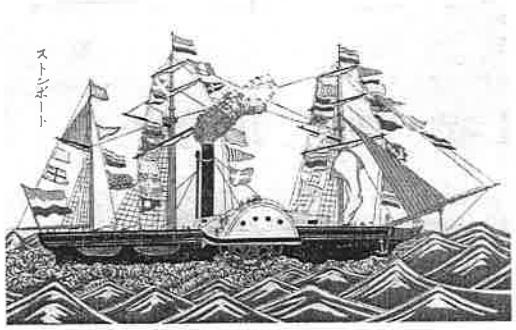
Detroit's 1967 riot destroyed more than two thousand buildings and came to symbolize the decline of that once-great city. *Rolls Press / Popperfoto / Getty Images*

East meets West during Europe's largely rural Dark Ages and the urban heyday of Islam. Here emissaries from Hārūn al-Rashīd, leader of the Arab world, present a sophisticated water clock to Charlemagne, whose empire had no such technology.

The Homage of Caliph Hārūn al-Rashīd to Charlemagne *by J. Jordaens (1593–1678) & A. Utrecht (1599–1652) / Phillips, The International Fine Art Auctioneers, UK / Photo © Bonhams, London, UK / Bridgeman Art Library*

Detroit tried to reverse its decline with foolish investments like its People Mover, which here glides over essentially empty streets.

Dennis MacDonald / World of Stock



Japanese contact with the Dutch through the city of Nagasaki gave them a considerable edge over their Asian neighbors. The Japanese navy used this ship, given by the Dutch in the nineteenth century, to develop skills that would allow it to hold its own against European naval powers.

Collection Maritime Museum Rotterdam

From his experience on Wall Street, New York's Mayor Michael Bloomberg learned the value of face-to-face connection, and he turned City Hall into a wall-less bullpen that enables the speedy flow of information.

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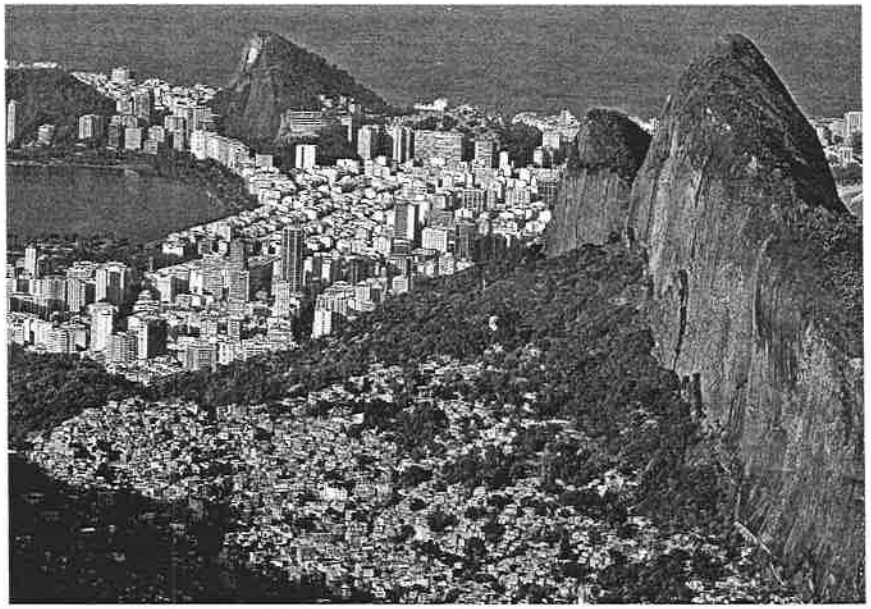
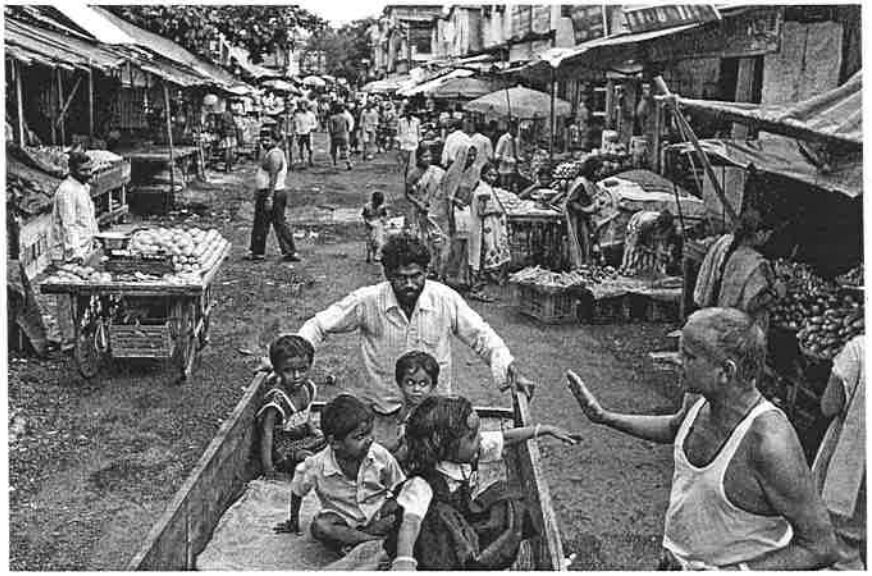
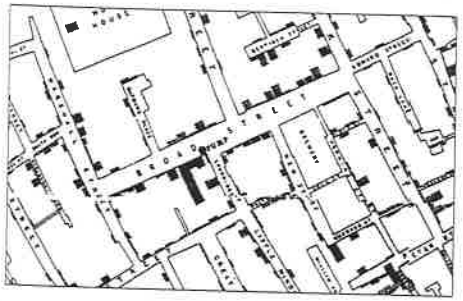


Most North Americans would consider the Rocinha favela (foreground) in Rio to be a sign of blight, but it actually indicates urban vitality. The people who settle there have more opportunities and better services than in Brazil's hinterland. *Ivo Gonzalez / Agência O Globo*



A man transports children through the bustle—and fetid streets—of Mumbai's Dharavi slum. Conditions like this are similar to those that faced many residents of Paris, London, New York, and other large cities in the nineteenth century. *Prashanth Vishwanathan / Bloomberg / Getty Images*

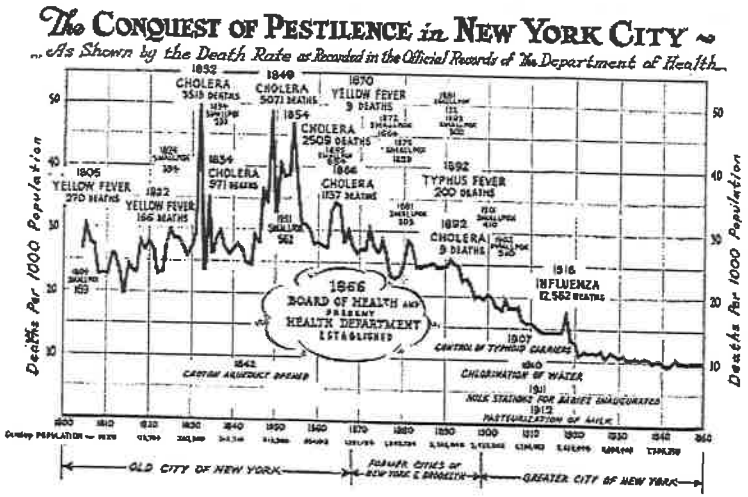


John Snow's famous 1854 cholera map helped him to determine that a pump well was the source of London's epidemic.

Wikimedia Commons (Published by C.F. Cheffins, Lith, Southhampton Buildings, London, England, 1854 in Snow, John. On the Mode of Communication of Cholera, *2nd Ed. John Churchill, New Burlington Street, London, England, 1855.)*

George Waring and other pioneers of sanitation transformed the motley crew of New York street cleaners (left, in 1868) into a well-organized and effective force (right, in 1920).

[Art 13 and 14:] Picture Collection, The New York Public Library, Astor, Lenox and Tilden Foundations



New York City's Department of Health shows the timeline of the city's mortality rate, which sharply dropped with the provision of clean water in the nineteenth century.

New York City Department of Health and Mental Hygiene

The stately order of Parisian boulevards is the product of a massive urban renewal project that dramatically altered that city during the second half of the nineteenth century. Now stringent rules prevent any significant alteration of this cityscape.

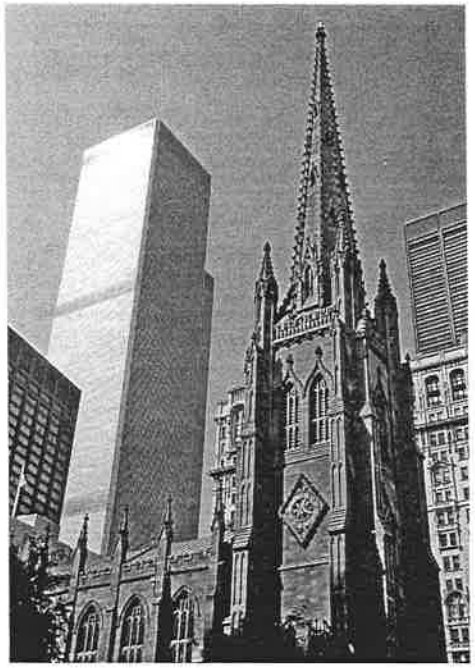
Library of Congress Prints and Photographs Division (Detroit Publishing Company, 1905)

The Chicago Home Insurance Building, built in 1885, is widely considered the world's first metal-framed skyscraper. This technology would come to dictate the shape of most cities in the twentieth century and beyond.

Chicago History Museum / Getty Images

Until nearby commercial structures began to dwarf it in 1890, Trinity Church had been New York's tallest building for forty years. The two buildings to the church's left held that honor for thirty years until they were destroyed in a terrible attack that ultimately illustrated the resilience of a great city.

Jeff Greenberg / World of Stock



The great urbanist Jane Jacobs looks none too happy with the tall buildings surrounding her. She argued vigorously against such high-rises and in favor of a low-slung cityscape like that of New York's Greenwich Village. Her arguments have not all proven correct.

Bob Gomel / Time & Life Pictures / Getty Images

Levittown, New York, provided thousands of mass-produced homes that helped America rebuild itself around the car.

Hulton Archive / Getty Images

The Woodlands, outside Houston, shows how much more luxurious and sylvan large-scale suburban development has become since Levittown. Unfortunately, the expansion of the exurbs has lead to more carbon intensive lifestyles. All that greenery is really pretty brown.

© Ted Washington

Mumbai grew large as a trading post of the British East India Company, and it is still a gateway between India and the rest of the world. Unfortunately, it also adopted some of the worst aspects of British urban policy, such as severely restricted building heights, that have made it too flat, too congested, and too expensive. Some skyscrapers have gone up recently, but Mumbai's entrepreneurial people remain cursed by a dearth of good buildings and good transport options.

Scott Eels / Bloomberg / Getty Images

Singapore is another legacy of the British East India Company, but it is now a model of superb urban management. It has a world-class water system, plenty of tall buildings, and a congestion-pricing system that electronically charges drivers for the social costs of their motoring. The result is a hyper-dense city-state with traffic that moves more fluidly than in many small U.S. towns.

Land Transport Authority of Singapore

Hong Kong is still another Asian city that bears the imprint of British management and continues to play its historic role as a prime link between East and West. It has combined good management with economic freedom, including the freedom to rebuild and build up. The result is a churning cauldron of activity that's a lot messier than Singapore but no less productive.

DAJ / Amana Images / Getty Images

gen has taken place in "low density residential areas." No country has a more venerable urban culture than Italy. Most tourists to Milan take away a strong memory of the spectacular Duomo and the nearby Galleria Vittorio Emanuele. But just like Detroit and St. Louis, the central city of Milan has lost hundreds of thousands of people, many of whom have moved to more car-intensive suburbs. The people fighting to save Leipzig are also battling a strong surge of suburbanization there.

It would be great for older cities if people just stopped liking cars, but that won't happen. For individual commuters in developed countries, cars save a lot of time. As mentioned in the introduction, in the United States, in 2006, the average car commute lasted twenty-four minutes; the average commute by mass transit took forty-eight minutes. The problem with public transportation is the time involved in getting to the bus or subway stop, waiting to be picked up and then getting from the final stop to one's ultimate destination. That time cost, which is independent of the distance of the journey, averages about twenty minutes for buses and subways. Even before the bus has traveled a stop, the commuter has used up as much time as many car commuters spend on their entire trip.

Some urbanists hope that rising gas prices will put an end to car-based living, and certainly higher gas prices make density more attractive. Yet unfortunately for cities, automotive ingenuity favors the suburbs. If current gas prices doubled, the gas costs of a family that drives twenty-five thousand miles a year in 25-mile-per-gallon cars increases by $3,000. But that family could completely undo this increased cost by switching to a Prius. Given the already vast investment in suburban infrastructure, I wouldn't bet on Americans giving up their cars even if gas prices rise enormously. Higher gas prices are more likely to reduce sprawl in the developing world, where infrastructure isn't yet in place and poorer people will be more responsive to higher costs.

Older cities can't count on either higher gas prices or a sudden disgust with the automobile to bring more Americans back to downtown living. But they can make city life more attractive by speeding the trips of their own residents. Urban bus commutes can be improved, as they have been in London and Singapore, by charging congestion fees that reduce the numbers of drivers on city streets. Even more important, new compact high-rise development can provide the one commute that is even faster than a twenty-four-minute drive: a

fifteen-minute walk. In many cities, like New York, once-poor neighborhoods, like Tribeca, that can offer fast commutes on foot to core business districts have come back, spurred by the same increasing value of time that pushed Americans out of public transit into cars. Cities can compete, but they need radical new designs that offer affordable housing and quicker commutes. Yet today, the most creative developments are in the suburbs.

Welcome to The Woodlands

Today, cities aren't competing against the relatively spartan suburbs built by the Levitts. They're fighting against far more attractive developments built in Sunbelt exurbs that manage to provide affordability and space and a wealth of amenities. About thirty miles north of Houston, on twenty-eight thousand sylvan acres, over ninety-two thousand people live in The Woodlands. Levittown, which today has four homes for every acre, is more than three times as dense as this Texas suburb. About 28 percent of The Woodlands land is given over to parks and other protected green space.

The Woodlands is the brainchild of natural gas mogul George Phydias Mitchell, who is, like Levitt, the son of an immigrant. Mitchell's father, born Savvas Paraskevopoulos, left a mountainous quarter acre of land in Greece to come to America and lay railroad track. He eventually ended up running a shoeshine and dry cleaning business in Galveston, Texas. His son George grew up catching fish and selling them to Houston tourists who would then proudly parade them as their own catches. George went to Texas A&M to study geology and petroleum engineering. He graduated first in his class and then spent World War II in the Army Corps of Engineers. After the war, he started wildcatting for natural gas, which was in great demand because cities were creating regulations that stopped private homes from burning coal for heating and cooking. The foes of this regulation argued that its costs would be enormous, but they underestimated the power of human creativity. Mitchell was a leader in the natural gas industry, which has provided a far greener way to heat America's cities than coal or oil.

So maybe it's no surprise that George Mitchell is something of an environmentalist. Apart from some nasty allegations about polluting a Texas aquifer, Mitchell has managed to cultivate a reputation for being a green energy

man, which is not the stereotype of the Texas wildcatter. In the 1960s, he decided to diversify into real estate, and he envisioned a vast city in a forest thirty miles north of Houston. Building a large new community in the middle of nowhere takes deep pockets, and Mitchell had to borrow millions to make his place-making bet. The Department of Housing and Urban Development gave The Woodlands a $50 million loan guarantee. But that guarantee came with conditions, one of which was the need for environmental sensitivity.

Mitchell then hired Ian McHarg, a Glaswegian based in Philadelphia, as his environmental consultant, and told him, "I have named my project The Woodlands and there had better be some woodlands when we get done." Mitchell's green sensibilities had been intrigued by McHarg's *Design with Nature*, a tract on urban planning that emphasizes an area's natural ecology. Together Mitchell and McHarg built The Woodlands. The community grew slowly. It didn't even acquire its first mall, the sine qua non of a true suburban development, until 1994. But as Houston expanded, The Woodlands exploded. Its population more than doubled in the 1990s, and it grew by over 40 percent between 2000 and 2008.

More than half of the adults in The Woodlands have a college degree, and the median household income is over $100,000. The residents are also spending remarkably little on housing, given their income levels. According to the Census Bureau, the average home value there is about $200,000, although it is certainly possible to spend more. I went to an open-house for a pretty impressive three-thousand-square-foot home that cost well under $300,000.

One of the most interesting, and almost urban, aspects of The Woodlands' management is its focus on social capital. The Woodlands works precisely because it is not a collection of isolated individuals; its social infrastructure has been designed to foster interpersonal connections. In 1975, Mitchell hired a Wharton-trained Lutheran minister to run The Woodlands Religious Community Incorporated, now called Interfaith, which was meant to "plan the religious community and all the human services in this new town." The minister bought a motor scooter and followed moving vans, meeting new residents as they arrived. Interfaith made sure that The Woodlands provided appropriate space for social, particularly religious, activities. Because nothing sours an area like religiously motivated hatred, Interfaith makes sure that religious messages are kept positive. In the aftermath of the 9/11 attacks, Inter-

faith managed to get rabbis to pray for Palestinians and Islamic leaders to pray for Jews.

Almost half of The Woodlands' households have children under eighteen, and The Woodlands specializes in schools. There are two highly rated traditional public high schools and an Academy of Science and Technology. There are four private high schools, two religious and two secular. The Woodlands knows that its well-educated residents care about their children's education. Only recently have big cities shown the same level of concern for providing the high-quality schools that will attract more educated residents.

Apparently The Woodlands' customers also care about golf. The development has seven golf courses. The Woodlands also has the Houston Symphony's summer home, a large and shiny shopping mall, and over 150 restaurants. The developers have even created a walking town area, where people can stroll and shop, but the Texas climate isn't always ideal for strolling, and far more people shop at the mall. Of course, most people drive to The Woodlands mall and its walking downtown. While there is a bus service that connects the area to Houston, fewer than 3 percent of commuters in the area use public transit. One of the great ironies of Mitchell and McHarg's environmentalism is that they tried to build a green community with plenty of trees and energy-efficient homes, but home owners drive so much that they undo most of those environmental benefits. Moreover, as I'll discuss in the next chapter, Texas has such a hot, humid climate that cooling those homes and restaurants inevitably generates a big carbon footprint.

Because The Woodlands is thirty miles from Houston's downtown towers, you might think that its residents face horrendous commutes. MapQuest gives the driving time from The Woodlands to Houston as thirty-seven minutes, and that optimistic estimate is based on light traffic, not a normal rush hour. Yet for 2006–2008, the Census Bureau gave the average commute time in The Woodlands as 28.5 minutes because so many people there aren't commuting into Houston at all. According to The Woodlands' management, about a third of its residents work in The Woodlands itself. The community has its own research park, which houses the corporate towers of a number of energy companies. If companies had remained rooted in city centers, then suburbanization would have been limited by lengthy commutes, but America's highways enabled the

suburbanization of companies as well as families. Fifty-six percent of the jobs in Houston are more than ten miles from the city center. Businesses have naturally relocated to be close to the vast number of potential employees living in Houston's northern suburbs.

According to Woodlands' management, a lot of their residents are also commuting to the airport, which is only fifteen minutes away. Many suburban communities have grown up around airports, like Chicago's O'Hare. This pattern is, in a way, no different from the earlier tendency of people and companies to locate near wharves and rail yards.

To all but the most ardent urbanist, The Woodlands is an attractive place. It has won numerous awards, and it attracts plenty of residents. The community offers a combination of high-quality construction, pleasant amenities, and costs that are far lower than those in suburban New York or coastal California. The Woodlands' success helps explain why so many people are moving to Houston and places like it.

Accounting for Tastes: Why a Million People Moved to Houston

Houston generates strong emotions. Its boosters, Texan to the core, love the place. Many coastal and European urbanists seem to view the city as Satan's earthly home. The anti-Texans hate the politics, the cars, the weather, the culture (or alleged lack thereof), the hunting, the oil industry, and pretty much anything else that goes on in America's fourth-largest city. Obviously, these people should not move to Houston.

But more than a million other people have moved to the area since the 2000 Census. Houston has much in common with other Sunbelt cities like Atlanta, Dallas, and Phoenix, the other fastest-growing metropolitan areas in the United States. If the advocates of older cities want to actually help their cities, they should try to understand Houston rather than criticizing it.

What is Houston giving its millions of inhabitants that older places, like New York or Detroit, are not? Houston's chief advantage over the Rust Belt is earnings. In Wayne County, Michigan, which surrounds Detroit, the median household in 2008 earned $53,000 a year; median household income in Har-

ris County, Texas, which surrounds Houston, is $60,000. In June 2010, the unemployment rate in Texas was 8.2 percent; the unemployment rate in Michigan was 13.2 percent. For the Rust Belt to compete more effectively against Texas, it would need to find its way to a more robust economy. As the cross-city statistics suggest, that would involve more skill accumulation.

But New York is better educated than Houston, and its wages are higher, yet Houston is attracting many more people. Houston is not luring people who could choose to live in San Francisco or New York because its economy is stronger or its climate is better than those cities. After all, Houston averages ninety-eight days each year when the temperature rises above 90 degrees. Yet its scorching summers aside, Houston succeeds by providing an affordable, attractive lifestyle for middle-class people.

It's hard to imagine anywhere better to be a Master of the Universe than New York. Manhattan is a great place to get rich and a great place to spend your wealth. With enough cash, you can live in a spacious aerie overlooking Central Park, shop at Barney's, eat at Le Bernardin, and send your children to some of the best private schools in the world. New York is also a pretty good place for poorer people, like the immigrants who cram into small apartments in the outer boroughs. Mass transit means that they don't need cars. The city has reasonable social services, and there are plenty of entry-level service-sector jobs with wages that beat those in Ghana or Guatemala.

But what if you are neither a partner at Goldman Sachs nor a poor immigrant? What if you're an average American family with two children, skills that put you in the middle of the U.S. income distribution, and aspirations toward a middle-class lifestyle? It's telling to work through the economic facts of life for a middle-income family deciding between New York and Houston, so that's what we'll do for the next couple of pages.

The average American family earned about $60,000 in 2006. Both members of the family were likely to work, although one spouse often works only part-time. Most middle-income people are in the service sector, working as nurses or sales representatives or store managers. In the 2000 Census, the average registered nurse earned $40,000 in Houston and $50,000 in New York. The average retail manager earned $27,800 in Houston and $28,000 in New York. People working in less idea-intensive industries don't get the same economic kick from Manhattan as financiers and publishers. To reflect the higher incomes in New York, I'll assume that our middle-income family earns $60,000 in Houston and $70,000 in New York.

What kind of housing will that money buy in the two areas? According to the U.S. Census, the average owner-occupied housing unit in the Houston area was worth about $120,000 in 2007. More than three quarters of the homes in the city were valued by their residents at less than $200,000. The National Association of Realtors gives $161,000 as the median price of a Houston home sold in the third quarter of 2009. When I did some Internet shopping for homes in the spring of 2007, I found that there were plenty of homes in Houston selling for less than $200,000 that are relatively new and often have four bedrooms or more. Some have more than three thousand square feet of living space, and others have pools. Some of them are in gated communities, and almost all of them seem to be in pleasant neighborhoods.

For the first thirty-seven years of my generally East Coast life, I lived in homes that are much less luxurious than what you get for $160,000 in Houston, even when I paid many times that cost. When I insured my first house in Cambridge, the agent, a Texan, laughed at the absurdly high price I'd paid for such a modest residence. When I sold the home, *Boston* magazine ran a photo of it to illustrate how even mediocre housing had become expensive. In 2006, the Census gave the average home price in Los Angeles as $614,000 and the average home price in New York City as $496,000.

These average homes are way out of reach for a family earning $70,000 in New York. Unless the family wins the housing lottery and gets a subsidized unit, Manhattan is pretty much out of the question. They could buy a perfectly pleasant home with three bedrooms and two baths on Staten Island for about $340,000. For example, New Brighton, the hometown of Tess McGill, Melanie Griffith's character in *Working Girl,* offers a number of older homes for about $375,000. These houses don't have the amenities of the new Houston houses, but they do offer about two thousand square feet of living space. Or a middle-income family could buy a condominium with two or three bedrooms in Queens, say in Howard Beach or Far Rockaway.

If the family can muster about $35,000 as a down payment, the basic annual housing costs, like interest payments, will run about $24,000 in New York (for a $340,000 home) and about $9,700 in Houston (for a $160,000 home). You get much more house in Houston, and you pay a lot less for it. This gap

would be just as big if I compared Houston with coastal California. More than anything else, cheap housing explains why Houston looks so good to so many middle-income Americans.

The Texas State Constitution of 1876, written as a renunciation of big government during Reconstruction, creates a number of roadblocks against any state income tax. As a result, Texas has no state or city income taxes. Houston residents will have to pay property taxes, which would come to around $4,800 for a $160,000 home. In New York City, this family would have to pay local property taxes, probably around $3,400, plus maybe another $3,400 in state income and city income taxes. The state and local tax difference therefore adds about $2,000 more to the burden of living in New York rather than Texas. These tax differences are real, but for middle-income Americans, housing costs are far more important. After paying for housing and federal and local taxes, the Houston family is left with about $37,000. The New York family, which started with $10,000 more, is left with closer to $30,000.

Now the Texans do need a car for each adult; there's no other way to get around. On average, American families earning $60,000 spent up to $8,500 per year on transportation. That amount could, barely, cover the payments on two relatively cheap cars, gas, and insurance in Texas. The New Yorkers could save by giving up on cars altogether, but in Staten Island or outlying Queens, they would likely want one car to buy groceries and move kids around, even if they took mass transit to work. It's likely that the New Yorkers will end up spending at least $3,000 less per year than the Texans on transportation.

The New Yorkers would spend less to get around, but they'd offset this financial gain in lost time. In the most recent Census data (2008), the average Houston commute is 26.4 minutes. In Queens, the average commute is 42.7 minutes. In Staten Island, the average commute is 42.1 minutes, and it is something of a multimode marathon. First, you've got to get from your home to the ferry, either walking or taking a bus. The ferry ride itself is only 25 minutes, but then you've got to get to your final Manhattan destination. A commute to Wall Street might be only 45 minutes; a commute to Midtown could be easily over an hour. All told, each adult working in Manhattan is spending between 125 and 250 extra hours per year riding on mass transit. This time loss is the equivalent of losing between three and seven weeks of work in travel.

Public-transit aficionados will argue that it's a lot more pleasant than driving. This is sometimes true, but a packed Manhattan subway can be a lot closer to hell than heaven. In a car, the driver can control the temperature and listen to CDs of Saul Bellow or Bruce Springsteen with less background noise than in a subway. Research on commuters' tastes shows that people dislike time spent on mass transit more than time spent driving.

After cars and houses and taxes, the Texans have $28,500 left, and the New Yorkers have $24,500 left, but those dollars will go further in Houston. The American Chamber of Commerce Research Association (ACCRA) produces local price indices for different areas of the country, including Houston and Queens (but not Staten Island). Apart from housing, the biggest price gaps are in groceries, which are, according to ACCRA, about 50 percent more expensive in Queens than in Houston. A T-bone steak costs over $3 more in Queens; chicken is 50 percent more expensive in New York. Correcting for these price differences, the after-tax, after-housing, after-transport real income of the Queens residents is a little less than $19,750. The same figure for Houston residents, who start off earning $10,000 less, is $31,250. In real dollars, the Houston family is 58 percent richer.

What about public services, like education? Ordinary public schools would be pretty comparable for a family in Houston and in Staten Island. If the New York family's kids got into one of the city's superstar public schools, like Stuyvesant, they would be getting a superb education for free. But even without a brilliant child, the Houston resident has the option of paying a little bit more and moving into a slightly more expensive school district, like Spring Branch, where SAT scores averaged 1058, in 2008, which is higher than in many New York suburbs. The New Yorkers could also get better schools by moving to the suburbs, but the price and commuting costs are going to be a lot more than the $225,000 it costs to buy a decent home in Spring Branch.

All told, the Houston residents are solidly in the middle class, with plenty of money for eating first-rate Tex-Mex at Pappasito's and shopping at the Galleria. They have decent options for schools, and relatively fast, comfortable commutes. The family in Staten Island or Queens is straining to make ends meet, constantly reminded that life is a struggle. For millions of Americans, the decision to move to Houston makes clear economic sense. If the expensive cities on America's coasts want to compete more effectively with Texas, then

they must figure out how to become more accessible to ordinary people. For middle-income people, the biggest economic advantage of Texas is not lower taxes or higher earnings, but affordable housing.

Why Is Housing So Cheap in the Sunbelt?

Why are Houston, and Atlanta and Dallas and Phoenix, so much cheaper than the cities on America's coasts? During brief periods of irrational exuberance, housing prices can become almost unfathomable. The bizarre doubling of home prices in Las Vegas between 2002 and 2006, which was followed by an equally severe price collapse, is beyond this economist's ken. But over longer time periods, housing prices generally conform to the laws of conventional economics. These laws may bend briefly, as they did in Las Vegas, but they then furiously reassert themselves.

Prices reflect the interaction of demand and supply. High prices, for housing or anything else, can only persist when demand is high and supply is limited. Low prices can result from either weak demand or abundant supply. The demand for water is vast, but glasses of it are often given away for free because there's so much of it. My dreadful sketches of bears, drawn for the captive audience of my children, could never command a high price, no matter how short their supply. Poor quality ensures low demand and low prices.

The demand for housing in a particular metropolitan area reflects the wages that can be earned in that area and the other pleasures the place offers. Almost two thirds of the variation in metropolitan prices can be explained by per capita income and two temperature variables. On average, if an area has family incomes that are 1 percent higher, its housing prices increase by 1.35 percent. If an area has January temperatures that are 5 degrees warmer, its prices go up by 3 percent. For every $1.00 that a metropolitan area's income rose between 1980 and 2000, housing prices increased by $1.20.

In the expensive areas on America's coasts, demand is robust, because of high incomes and pleasures like those discussed in chapter 5. California's Santa Clara County, Silicon Valley, has a splendid Mediterranean climate and incomes that are 60 percent above the U.S. average. Unsurprisingly, people will pay plenty to live there. Between 2005 and 2007, average housing prices in the county were close to $800,000, more than four times the U.S. average. Prices

have dropped since then, but according to recent sales data, the San Jose metropolitan area, which includes Santa Clara County, remained the most expensive place in the continental United States in the second quarter of 2009.

Yet Santa Clara's high prices reflect more than just good weather and high incomes. During the eight years between 2001 and 2008, Santa Clara permitted only about sixteen thousand new single-family homes, or one new home for every fifty acres of land. Despite booming demand, the area's stock of single-family homes increased by less than 5 percent, less than one third of the U.S. average building rate over that time period. If Silicon Valley had built two hundred thousand more homes over those eight years, then standard housing statistics suggests that housing prices would be about 40 percent lower, despite the good weather and high incomes.

Between 2001 and 2008, Harris County, Texas, which includes Houston, did permit more than two hundred thousand new single-family homes, or almost one new home for every five acres. That abundance of construction helps explain why Houston is so affordable. Certainly, a Houston home will never be as expensive as a home in Silicon Valley, at least as long as Californians earn more and enjoy nicer summers. Yet Houston's economy is much stronger than most of the Rust Belt's economies, and many Americans do seem to prefer a hot, humid climate to the cold of the Midwest. A lot of people want to live in Houston, but prices stay low because building is so easy.

Not every place with low prices is kept cheap through abundant new construction. The combination of economic collapse and cold weather limits the demand for living in Detroit, and that's why prices there are so low. Average household income in Detroit is 48 percent below the U.S. norm, and an average home is valued at $90,000, half the U.S. average. Detroit's freezing winters make the city's prices even lower than the area's incomes would predict. Indeed, Detroit's housing prices are below the cost of building new homes, which ensures that there will continue to be almost no private development and consequently continued population loss. When prices aren't high enough to support new construction, there will be no new homes and no new people. In places like Detroit, we can tell that prices are held down because of low demand because there is also little construction in the city. In places like Houston, we can tell that prices are held down by abundant supply, not low demand, because there is so much new construction in the city.

Plentiful housing doesn't just make prices lower, it also reduces price swings, such as those that have recently rocked the American economy. Between May 2002 and May 2006, the peak of the recent bubble, American housing prices rose by 64 percent, according to Case-Shiller housing price data, which covers twenty large metropolitan areas and which, by looking at repeated sales of the same homes, tries to eliminate the impact of changes in housing quality. That data excludes Houston but includes Dallas, which has a similar housing market. In Dallas, prices rose by only 8 percent over those four boom years, less than the rate of inflation. During the three years that followed the bubble's peak, prices in general dropped by an average of 32 percent, but prices in Dallas fell by only 5.5 percent. As prices in much of America dropped off a cliff, National Association of Realtors data shows that prices in Houston have stayed remarkably constant. The average sale price was $152,500 in 2007, $151,600 in 2008, and $153,100 in 2009.

Prices in Houston remained flat, despite the extreme volatility of housing markets worldwide, because construction responded to changing demand. In 2006, during the height of the boom, Harris County permitted more than thirty thousand units, and that building helped keep prices low. By 2008, building had dropped in half, and that fall in construction cushioned the drop.

Elastic housing supply usually limits price bubbles. From 1996 to 2006, on average, real prices rose by 94 percent in twenty-six of America's cities where building is most difficult, but only by 28 percent in America's twenty-eight least supply-constrained cities. In the boom of the 1980s, real estate prices went up by 29 percent in the supply-restricted areas, but only by 3 percent in the elastic places. Flexible housing supply isn't a perfect antidote to homebuyer madness; there are few barriers to building in Las Vegas and Phoenix, yet these places experienced extremely large and painful price swings. But elastic supply does make such episodes less likely.

Texas builders can supply so many new, inexpensive homes because the physical cost of building a standard house in Houston is about $75 a square foot. Why should housing in Texas, or anyplace with abundant land, cost much more than the cost of building a home? Texas and California together have so much space that if the *whole world* lived in those two states, each person would have more than 1,600 square feet of land. America's abundance of

land has meant that in much of the country, homes typically cost no more than 25 percent more than the physical costs of construction.

Yet in much of coastal America, home prices are dramatically higher than construction costs. In Los Angeles, construction costs are 25 percent higher than in Houston, but housing is over 350 percent more expensive in Los Angeles. It's harder to compare Houston with Manhattan because it's so much more expensive to build up than it is to build out. Yet in recent years, the prices of new Manhattan condominiums have been more than twice the physical cost of building up. Something other than building costs is responsible for high prices in coastal America.

The most straightforward explanation for high prices in coastal America is that land is scarce and therefore expensive. There certainly isn't much land in Manhattan, which is why people go to the expense of building up. But it doesn't take more land to add an extra story to a high-rise, so the lack of land can't explain why Manhattan prices are so much higher than the costs of adding an extra story. Moreover, in expensive suburban areas, like Santa Clara County and Westchester County, New York, there is actually more land per household than in Houston. In Harris County, Texas, there are 3.6 people per acre. The comparable figures for Westchester and Santa Clara counties are 3.44 and 2 people per acre respectively. In those places, there's plenty of land; it just isn't available for construction.

All land isn't equal. Flat land is easy to build on; hills are a problem. Wharton economist Albert Saiz's work on local topography has found that natural barriers to building, including mountains and water, help explain the differences in housing supply across metropolitan areas. Houston is flat, and so is most of Westchester County, but much of Silicon Valley is far more vertical. Yet even if 60 percent of Santa Clara County is too hilly to be built upon, there are only five people and two homes on every acre of remaining land, which hardly seems like overcrowding.

There is a land shortage in Santa Clara County and throughout much of coastal America, but that shortage is the handiwork of regulation, not nature. Together with Bryce Ward and Jenny Schuetz, I've tried to measure the effect of land-use regulations throughout greater Boston. Out of 187 cities and towns, the majority had average minimum lot sizes that were greater than one third

of an acre. Most of these places had 10 percent or less of their land that could be used to build multiunit developments.

Over the past thirty years, Massachusetts towns have imposed stricter and stricter rules preventing new development and subdivisions. One municipality forbids building anyplace where there's a "wicked big puddle." Protecting wetlands is important, but taken to this extreme, environmentalism becomes mere NIMBYism, the reflexive opposition to any new building nearby.

In Massachusetts, the more land-use restrictions there are, the less new building there will be. Each extra type of rule is associated with about 10 percent less building. Across areas, a ten-thousand-square-foot, or quarter-acre, increase in minimum lot size is associated with a 10 percent drop in construction between 1980 and 2002. This shouldn't be a surprise. The amount of land is fixed. If you require more land per home, you get fewer homes and higher prices. That ten-thousand-square-foot increase in minimum lot size comes with a 4 percent increase in prices. California's growth controls have similarly reduced the amount of new construction and pushed prices up. Indeed, the same pattern applies to the nation as a whole. In America's expensive coastal regions, housing supply is restricted not by lack of land but because public policies make it hard to build.

By contrast, Houston has always been prodevelopment. The city was founded by two real estate developers from upstate New York who promised prospective settlers fresh water and invigorating ocean breezes. Over the next 150 years, local business interests led by the Houston Chamber of Commerce have coaxed and prodded Houston into becoming an urban giant. Above all, the city's leaders have made sure that nothing stands in the way of new building. Houston is unique among all American cities in that it lacks a zoning code. More than in any other place, Houston's developers have successfully argued that restrictions on development will make the city less affordable to the less successful. These arguments are patently self-interested, but they are also correct. Houston's freewheeling growth machine has actually done a better job of providing affordable housing than all of the progressive reformers on America's East and West coasts.

In the early 1920s, New York was also a builders' paradise, and as a result, housing stayed affordable. In the postwar years, New York increasingly restricted development and tried to make up for the lack of private supply with rent control and public housing. This strategy failed miserably, as it has throughout Europe. The only way to provide cheap housing on a mass scale is to unleash the developers.

Levittown, The Woodlands, and hundreds of other large developments can be built so cheaply because they are built on a large scale. Mass production has made clothing and cars affordable for everyone; it has the same effect in the housing market. Places like New York and San Francisco, which claim to care about providing low-cost housing for the poor, are generally unaffordable. Texas, which has never shown any commitment to social housing, leads the country in building inexpensive homes. If older cities with high prices are going to compete, then they must act more like Houston and allow more building.

What's Wrong with Sprawl?

In the nineteenth century, economics drove the growth of America's cities. People moved to places, like Chicago, that were economic engines. In the twentieth century, an increasingly affluent population started making choices based on quality of life as well as wages. Los Angeles' early growth came from its oil wells and its port, but also from the allure that its climate had for retiring Midwestern farmers or footloose authors, like L. Frank Baum and Edgar Rice Burroughs. When people move to places that are more productive, the country as a whole becomes more economically vibrant. When people move to pleasant places, they enjoy life more, and when they move to more temperate climates, they use less energy.

But in the late twentieth century, public policies, both national and local, started playing an outsize role in urban change. As we've seen, the fastest growing places in the United States—Atlanta, Dallas, Houston, and Phoenix—are growing not because of high wages and temperate climates but because their governments are friendlier to new development than older communities in California and the Northeast. The path of America's future is being determined by the whims of local zoning boards that don't want more people living in their highly productive, pleasant communities.

A different set of policies has played an equally important but largely hidden role, pushing people to suburbanize. I am sufficiently unusual that I'm

always cautious about using my own life to infer anything about anyone else's, but my decision to suburbanize was a conventional one, driven for the most part by common factors. At the start of this chapter, I listed the forces that brought me to a suburb: living space, soft grass for spill-prone toddlers, a desire to diversify my life with greater distance from my employer, a fast commute, and good schools. Of these five factors, only two—the grass and distance from Harvard—are independent of public policies.

My wife and I were pretty sure that we wanted to live someplace where we could eat out anonymously, but that didn't necessarily imply living in a suburb. We could have moved to Boston, which is a charming and pleasant city. One of the factors that pushed against Boston is that a five-mile commute from an urban apartment across the Charles River would have been no quicker than a fifteen-mile drive in from the suburbs. If I leave early enough, that drive takes me less than twenty-five minutes, thanks to the interstate highway system, which was generously subsidized by the federal government. My commute itself is on a highway that was funded by tolls, but when I drive to the airport, I rely on a recent expensive extension largely funded by state and federal largesse. As a matter of public policy, I remain skeptical of the $15 billion Big Dig, but I'd be foolish not to use it when I drive to Logan. My commute is also cheap because American governments have, unlike their European counterparts, decided not to heavily tax gasoline.

Another factor that pushed us to the suburbs was the cost of living space. Cambridge strongly restricts new construction, and that keeps prices up, but my suburb is also artificially expensive because of its draconian limitations on new development. The big difference between city and suburb in this case is that the federal government heavily subsidizes home ownership by allowing me to deduct interest on my home mortgage. That subsidy makes owning cheaper than renting, and being pro-home-ownership means being anticity.

The long, passionate love affair between American politicians and home ownership is a curse to the cities that power the American economy. More than 85 percent of people living in multifamily dwellings rent their living quarters. More than 85 percent of people in single-family detached dwellings own them. This connection isn't a random statistical artifact. It makes sense to have one roof, one owner. When people rent single-family homes, they often take bad care of them. Homes depreciate by 1.5 percent more per year

if they are inhabited by renters rather than owners, who work hard to take care of their important asset. By contrast, in multifamily dwellings, dispersed ownership is a big headache. Think of the battles that roil co-op boards. Because dense cities are filled with multiunit buildings, they're also filled with renters. In Manhattan, 76 percent of housing units are rentals. When the federal government encourages people to own, it is implicitly encouraging people to leave dense cities.

Perhaps the most important factor encouraging suburbanization is our school system. Big cities attract poor people for many good reasons, but educating the children of poorer parents creates stresses for urban school systems. Big-city schools tend to have much lower test scores despite spending per student as much as or more than many suburban school districts. There's no reason why big cities can't have great schools. Paris has some of the finest high schools in the world, and many American cities boast superb private and magnet schools. The same forces of competition and density that make big cities havens for excellent restaurants could also make them great places for education.

However, the American public school system essentially puts a public quasi-monopoly in charge of central-city schools. A public monopoly that must struggle to provide the basics to hundreds of thousands of less fortunate children will naturally have trouble providing first-rate education for upper-middle-class parents, at least relative to a homogeneous suburb filled with upper-middle-class people. The American public school system, which forces people to move in order to find better public schools, has been another unnecessary curse on cities.

As noted earlier, this problem could be eased by a move either to the left or the right. If the United States emulated France and embraced nationwide quality schooling funded by the state, there would be less reason to flee urban areas. If the United States adopted a large-scale voucher program under which parents could send their children to school anywhere, urban competition would ensure that cities developed better schools, and city dwellers could always send their kids to suburban schools. The current system has its virtues: Local control over small school districts *can* give the kids in those schools a great education. But for our cities, it has been a disaster.

Suburbs aren't intrinsically bad, and there's a lot to like in Houston. For

many people, Sunbelt sprawl makes sense. But sprawl of the sort that Houston embodies has been encouraged by mistaken public policies. The fault with Houston's growth doesn't lie in the area itself, but elsewhere, in more temperate and economically productive places that have used regulations to stymie development and make housing unaffordable. There's no sense in blaming the suburbs or the suburbanites. The fault lies in our policies and regulations, which have created incentives that force too many Americans to leave our cities.

The fact that suburbia continues to be artificially boosted by mistaken policies should offer some hope to the anxious urbanist. These policies need not be permanent. In 2005, a tax-reform panel, appointed by a Texan Republican president who repeatedly lauded the ownership society, advocated a major decrease in the size of the home mortgage interest deduction. If federal housing policies become less antiurban, then our big cities will become more appealing.

Moreover, many of the benefits of suburbia may become less important if America continues to grow. The ability to commute to work quickly on vast, uncluttered highways is a plus for many, but as sprawl continues, those highways will become more and more congested. Already we have seen people who highly value their time return to once downtrodden downtown areas like Tribeca to reap the advantages of walking to work.

Today suburban schools are, on average, better than their big-city counterparts. But no immutable law makes this so. Well-run city schools that harness the power of urban human capital and competition can, and sometimes do, beat the suburbs. It once seemed that big cities would always be synonymous with crime, but that's no longer the case. There could certainly come a time when cities are widely seen as the best places to educate our children.

Eliminating the mistaken policies that hurt our cities makes sense, because sprawl has costs as well as benefits. Like most other growing places, sprawling suburbs must struggle with water issues, sanitation, and congestion. Perhaps the biggest economic question is whether suburban office enclaves can generate the same degree of intellectual excitement as traditional downtowns. These areas involve far fewer random interactions, and they often concentrate in a particular industry, which reduces the chances of cross-field leaps in innovation.

Most worrisome of all is the prospect that the developing world will adopt

the car-based lifestyle that reigns in much of America. Few cities feel as immense as São Paulo, with its scores of separate high-rise centers stretching out from the inner city. The urban region goes on for miles and miles. Many of São Paulo's suburbs are the traditional poor settlements of the developing world, whose people ride public transit to work and live in small homes that would be substandard in the United States or Europe. But there are also plenty of wealthier enclaves that look like Houston's suburbs. You can find similar places around Bangalore, Mumbai, Cairo, Mexico City, and pretty much any growing city throughout the world.

If the entire world starts looking like Houston, the planet's carbon footprint will skyrocket. Houston residents, for all the sensible suburban logic of their lives, are some of the biggest carbon emitters in the country. All those 90-degree days and all that humidity mean that Houston is a ravenous consumer of electricity. All that driving gobbles up plenty of gas. Urbanization will continue in India and China, and that's a good thing—there is no future in rural poverty. But it would be a lot better for the planet if their urbanized population lives in dense cities built around the elevator, rather than in sprawling areas built around the car.