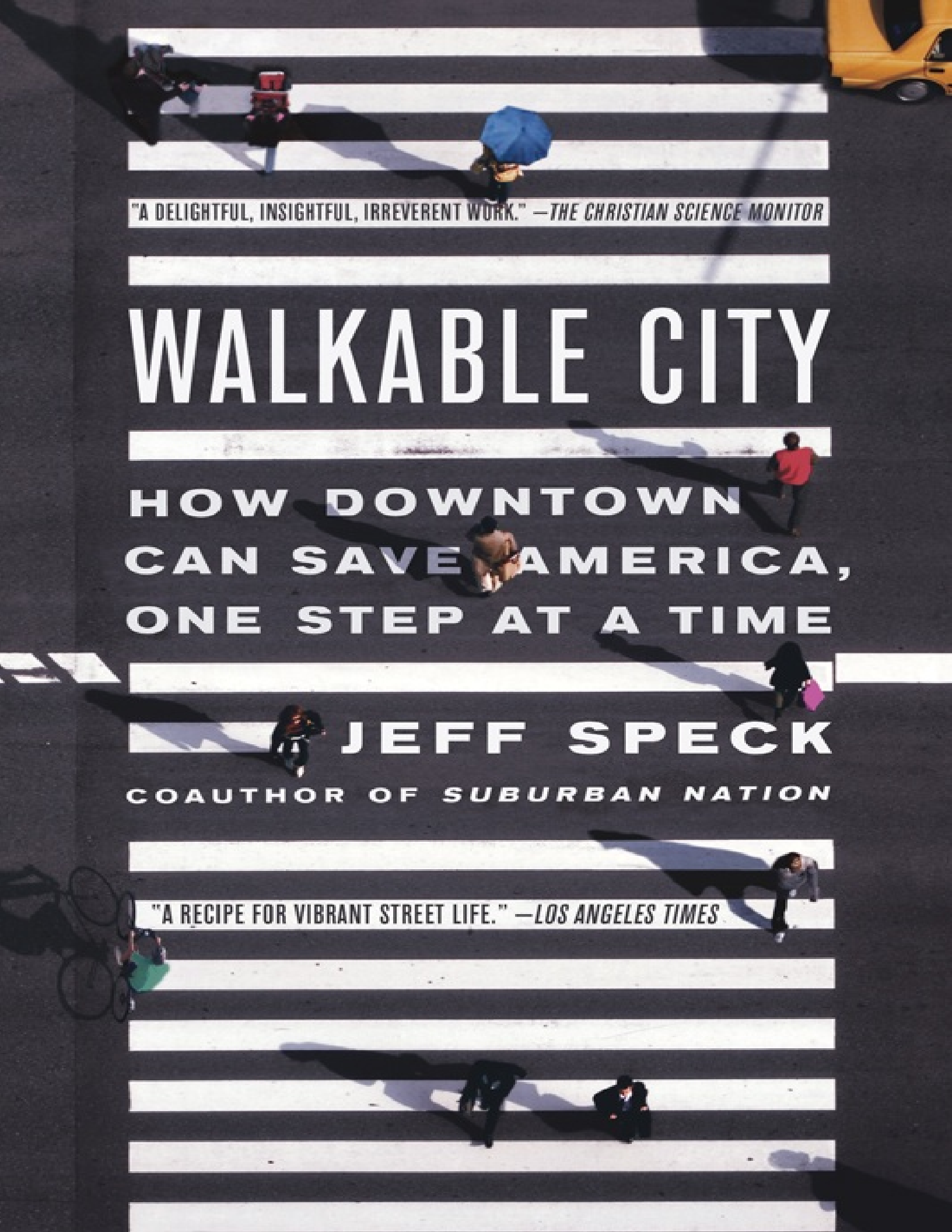

"A DELIGHTFUL, INSIGHTFUL, IRREVERENT WORK." —*THE CHRISTIAN SCIENCE MONITOR*

WALKABLE CITY

HOW DOWNTOWN CAN SAVE AMERICA, ONE STEP AT A TIME

JEFF SPECK

COAUTHOR OF *SUBURBAN NATION*

"A RECIPE FOR VIBRANT STREET LIFE." —*LOS ANGELES TIMES*

WALKABLE CITY

HOW DOWNTOWN CAN SAVE AMERICA, ONE STEP AT A TIME

JEFF SPECK

NORTH POINT PRESS
A DIVISION OF FARRAR, STRAUS AND GIROUX
NEW YORK

For Alice

CONTENTS

PROLOGUE

This is not the next great book on American cities. That book is not needed. An intellectual revolution is no longer necessary. What characterizes the discussion on cities these days is not a wrongheadedness or a lack of awareness about what needs to be done, but rather a complete disconnect between that awareness and the actions of those responsible for the physical form of our communities.

We've known for three decades how to make livable cities—after forgetting for four—yet we've somehow not been able to pull it off. Jane Jacobs, who wrote in 1960, won over the planners by 1980. But the planners have yet to win over the city.

Certain large cities, yes. If you make your home in New York, Boston, Chicago, San Francisco, Portland, or in a handful of other special places, you can have some confidence that things are on the right track. But these locations are the exceptions. In the small and midsized cities where most Americans spend their lives, the daily decisions of local officials are still, more often than not, making their lives worse. This is not bad planning but the absence of planning, or rather, decision-making disconnected from planning. The planners were so wrong for so many years that now that they are mostly right, they are mostly ignored.

But this book is not about the planning profession, nor is it an argument for more planning per se. Instead, it is an attempt to simply delineate what is wrong with most American cities and how to fix it. This book is not about why cities work or how cities work, but about what works in cities. And what works best in the best cities is walkability.

Walkability is both an end and a means, as well as a measure. While the physical and social rewards of walking are many, walkability is perhaps most useful as it contributes to urban vitality and most meaningful as an indicator of that vitality. After several decades spent redesigning pieces of cities, trying to make them more livable and more successful, I have watched my focus narrow to this topic as the one issue that seems to both influence and embody most of the others. Get walkability right and so much of the rest will follow.

This discussion is necessary because, since midcentury, whether intentionally or by accident, most American cities have effectively become no-walking zones. In the absence of any larger vision or mandate, city engineers—worshiping the twin gods of Smooth Traffic and Ample Parking—have turned our downtowns into places that are easy to get to but not worth arriving at. Outdated zoning and building codes, often imported from the suburbs, have matched the uninviting streetscape with equally antisocial private buildings, completing a public realm that is unsafe, uncomfortable, and just plain boring. As growing numbers of Americans opt for more urban lifestyles, they are often met with city centers that don't welcome their return. As a result, a small number of forward-thinking cities are gobbling up the lion's share of post-teen suburbanites and empty nesters with the wherewithal to live wherever they want, while most midsized American cities go hungry.

How can Providence, Grand Rapids, and Tacoma compete with Boston, Chicago, and Portland? Or,

more realistically, how can these typical cities provide their citizens a quality of life that makes them want to stay? While there are many answers to that question, perhaps none has been so thoroughly neglected as design, and how a comprehensive collection of simple design fixes can reverse decades of counterproductive policies and practices and usher in a new era of street life in America.

These fixes simply give pedestrians a fighting chance, while also embracing bikes, enhancing transit, and making downtown living attractive to a broader range of people. Most are not expensive—some require little more than yellow paint. Each one individually makes a difference; collectively, they can transform a city and the lives of its residents.

Even New York and San Francisco still get some things wrong, but they will continue to poach the country's best and brightest unless our other, more normal cities can learn from their successes while avoiding their mistakes. We planners are counting on these typical places, because America will be finally ushered into "the urban century" not by its few exceptions, but by a collective movement among its everyday cities to do once again what cities do best, which is to bring people together—on foot.

A GENERAL THEORY OF WALKABILITY

As a city planner, I make plans for new places and I make plans for making old places better. Since the late eighties, I have worked on about seventy-five plans for cities, towns, and villages, new and old. About a third of these have been built or are well under way, which sounds pretty bad, but is actually a decent batting average in this game. This means that I have had my fair share of pleasant surprises as well as many opportunities to learn from my mistakes.

In the middle of this work, I took four years off to lead the design division at the National Endowment for the Arts. In this job, I helped run a program called the Mayors' Institute on City Design, which puts city leaders together with designers for intensive planning sessions. Every two months, somewhere in the United States, we would gather eight mayors and eight designers, lock ourselves in a room for two days, and try to solve each mayor's most pressing city-planning challenge.[•] As might be imagined, working side by side with a couple hundred mayors, one mayor at a time, proved a greater design education than anything I have done before or since.

I specialize in downtowns, and when I am hired to make a downtown plan, I like to move there with my family, preferably for at least a month. There are many reasons to move to a city while you plan it. First, it's more efficient in terms of travel and setting up meetings, something that can become very expensive. Second, it allows you to truly get to know a place, to memorize every building, street, and block. It also gives you the chance to get familiar with the locals over coffee, dinners in people's homes, drinks in neighborhood pubs, and during chance encounters on the street. These nonmeeting meetings are when most of the real intelligence gets collected.

These are all great reasons. But the main reason to spend time in a city is to live the life of a citizen. Shuttling between a hotel and a meeting facility is not what citizens do. They take their kids to school, drop by the dry cleaners, make their way to work, step out for lunch, hit the gym or pick up some groceries, get themselves home, and consider an evening stroll or an after-dinner beer. Friends from out of town drop in on the weekend and get taken out for a night on the main square. These are among the many normal things that nonplanners do, and I try to do them, too.

A couple of years ago, while I was working on a plan for Lowell, Massachusetts, some old high-school friends joined us for dinner on Merrimack Street, the heart of a lovely nineteenth-century downtown. Our group consisted of four adults, one toddler in a stroller, and my wife's very pregnant belly. Across the street from our restaurant, we waited for the light to change, lost in conversation. Maybe a minute passed before we saw the pushbutton signal request. So we pushed it. The conversation advanced for another minute or so. Finally, we gave up and jaywalked. About the same time, a car careened around the corner at perhaps forty-five miles per hour, on a street that had been widened to ease traffic.

The resulting near-miss fortunately left no scars, but it will not be forgotten. Stroller jaywalking is a surefire way to feel like a bad parent, especially when it goes awry. The only consolation this time was

that I was in a position to do something about it.

As I write these words, I am again on the road with my family, this time in Rome. Now the new baby is in a sling, and the toddler alternates between a stroller and his own two feet, depending on the terrain and his frame of mind. It is interesting to compare our experience in Rome with the one in Lowell, or, more to the point, the experience of walking in most American cities.

Rome, at first glance, seems horribly inhospitable to pedestrians. So many things are wrong. Half the streets are missing sidewalks, most intersections lack crosswalks, pavements are uneven and rutted, handicap ramps are largely absent. Hills are steep and frequent (I hear there are seven). And need I mention the drivers?

Yet here we are among so many other pedestrians—tourists and locals alike—making our way around Trastevere … on our toes, yes, but enjoying every minute of it. This anarchic obstacle course is somehow a magnet for walkers, recently selected by readers of *Lonely Planet* travel guides as one of the world's "Top Ten Walking Cities." Romans drive a fraction of the miles that Americans do. A friend of ours who came here to work in the U.S. embassy bought a car when he arrived, out of habit. Now it sits in his courtyard, a target for pigeons.

This tumultuous urban landscape, which fails to meet any conventional American measure of "pedestrian friendliness," is a walker's paradise. So what's going on here? Certainly, in competing for foot traffic, Anatole Broyard's "poem pressed into service as a city" began with certain advantages. The *Lonely Planet* ranking is likely more a function of spectacle than pedestrian comfort. But the same monuments, arranged in a more modern American way, would hardly compete. (Think Las Vegas, with its Walk Score of 54•.) The main thing that makes Rome—and the other winners: Venice, Boston, San Francisco, Barcelona, Amsterdam, Prague, Paris, and New York—so walkable is what we planners call "fabric," the everyday collection of streets, blocks, and buildings that tie the monuments together. Despite its many technical failures, Rome's fabric is superb.

Yet fabric is one of several key aspects of urban design that are missing from the walkability discussion in most places. This is because that discussion has largely been about creating adequate and attractive pedestrian facilities, rather than walkable cities. There is no shortage of literature on this subject and even a fledgling field of "walkability studies" that focuses on impediments to pedestrian access and safety, mostly in the Toronto suburbs.▪ These efforts are helpful, but inadequate. The same goes for urban beautification programs, such as the famous "Five B's" of the eighties—bricks, banners, bandstands, bollards, and berms—that now grace many an abandoned downtown.[1]

Lots of money and muscle have gone into improving sidewalks, crossing signals, streetlights, and trash cans, but how important are these things, ultimately, in convincing people to walk? If walking was just about creating safe pedestrian zones, then why did more than 150 Main Streets pedestrianized in the sixties and seventies fail almost immediately?[2] Clearly, there is more to walking than just making safe, pretty space for it.

The pedestrian is an extremely fragile species, the canary in the coal mine of urban livability. Under the right conditions, this creature thrives and multiplies. But creating those conditions requires attention to a broad range of criteria, some more easily satisfied than others. Enumerating and understanding these criteria is a project for a lifetime—it has become mine—and is forever a work in progress. It is presumptuous to claim to have figured it out, but since I have spent a lot of time trying, I reckon it is worth communicating what I have learned so far. Since it tries to explain so much, I call this discussion the General Theory of Walkability.

The General Theory of Walkability explains how, to be favored, a walk has to satisfy four main conditions: it must be useful, safe, comfortable, and interesting. Each of these qualities is essential and

none alone is sufficient. *Useful* means that most aspects of daily life are located close at hand and organized in a way that walking serves them well. *Safe* means that the street has been designed to give pedestrians a fighting chance against being hit by automobiles; they must not only be safe but *feel* safe, which is even tougher to satisfy. *Comfortable* means that buildings and landscape shape urban streets into "outdoor living rooms," in contrast to wide-open spaces, which usually fail to attract pedestrians. *Interesting* means that sidewalks are lined by unique buildings with friendly faces and that signs of humanity abound.

These four conditions are mostly a way of thinking about a series of specific rules that are further organized into what I call the Ten Steps of Walkability. These will be explored later. Together, I believe that they add up to a complete prescription for making our cities more walkable.

But first, we must understand that the walkable city is not just a nice, idealistic notion. Rather, it is a simple, practical-minded solution to a host of complex problems that we face as a society, problems that daily undermine our nation's economic competitiveness, public welfare, and environmental sustainability. For that reason, this book is less a design treatise than an essential call to arms. Why we need walkability so badly is the subject of the next section.

PART I

WHY WALKABILITY?

While battle was never declared, many American cities seem to have been made and remade with a mandate to defeat pedestrians. Fattened roads, emaciated sidewalks, deleted trees, fry-pit drive-thrus, and ten-acre parking lots have reduced many of our streetscapes to auto zones in which pedestrian life is but a theoretical possibility.

The causes of this transformation are sometimes surprising. In Miami, for example, people wonder why intersections in residential neighborhoods are often so fat: two relatively narrow streets will meet in a sweeping expanse of asphalt that seems to take hours to walk across. The answer is that the firefighters' union once struck a deal that no truck would ever be dispatched without a hefty number of firemen on it. That's good for safety and even better for job security, but the fire chief's response was to purchase only the heftiest trucks. So, for many years, one-story residential neighborhoods in Miami had to be designed around the lumbering turning radius of a truck built for tall-building fires.[1]

The above anecdote is far from unusual in today's landscape of disassociated professions and special interests that determine the shape of our communities. The modern world is full of experts who are paid to ignore criteria beyond their professions. The school and parks departments will push for fewer, larger facilities, since these are easier to maintain—and show off. The public works department will insist that new neighborhoods be designed principally around snow and trash removal. The department of transportation will build new roads to ease traffic generated by the very sprawl that they cause. Each of these approaches may seem correct in a vacuum, but is wrong in a city.

If they are to function properly, cities need to be planned by generalists, as they once were. Generalists understand that consolidating parks means that fewer people can walk to them. Generalists understand that infrastructure organized in service of big trucks is not always inviting to small people. And generalists, finally, are coming to understand that more lanes usually just lead to more traffic.

Most significantly, generalists—such as planners and, one hopes, mayors—ask the big-picture questions that are so often forgotten among the day-to-day shuffle of city governance. Questions like: What kind of city will help us thrive economically? What kind of city will keep our citizens not just safe, but healthy? What kind of city will be sustainable for generations to come?

These three issues—wealth, health, and sustainability—are, not coincidentally, the three principal arguments for making our cities more walkable.

WALKING, THE URBAN ADVANTAGE

The walking generation; A demographic perfect storm; The walkability dividend

Many of my client cities ask me the same question: "How can we attract corporations, citizens, and especially young, entrepreneurial talent?" In Grand Rapids, Michigan, where I am employed by the city's leading philanthropists, they ask it differently: "How can we keep our children from leaving? How can we keep our grandchildren from leaving?"

The obvious answer is that cities need to provide the sort of environment that these people want. Surveys—as if we needed them—show how creative-class citizens, especially millennials, vastly favor communities with *street life*, the pedestrian culture that can only come from walkability.

A lack of street life was one reason why the leadership at Wolverine World Wide, the manufacturers of Merrell and Patagonia Footwear, was having trouble keeping new creative workers from jumping ship from their suburban West Michigan headquarters. The problem was not the company, but the impression among newly arrived spouses that they had no way to break into the social scene … even though West Michiganders are known for their openness and hospitality. So what was going on? It turns out that this social scene could only be accessed by car and thus by invitation. With no pedestrian culture, there were no opportunities for the chance encounters that turn into friendships.

When it came time to launch a new apparel division, they decided to base it in Portland, Oregon.

Since that time, Wolverine has set up a new innovation center along with three other top West Michigan companies in downtown Grand Rapids. According to Blake Krueger, Wolverine's president and CEO, the company needed "an urban hub that attracts and retains the millennial creative class. You need a vibrant city heartbeat for these people. Downtown, they're in a more creative live/work/play environment than if they are stuck out here in suburbia." This facility now includes designers and product developers across a dozen different brands.

For many companies, an urban satellite is not enough. Brand Muscle, formerly of leafy Beachwood, Ohio, recently relocated all of its 150 employees to downtown Cleveland, thanks in part to the desires of a largely twentysomething workforce. Now staffer Kristen Babjack brags about her urban lifestyle: "We can leave our apartment and walk five feet to a restaurant to get something to eat, or to go shopping. We have all of our arenas and sporting areas and concerts all in one pretty much walkable area."• Similar stories are making the news in Saint Louis, Buffalo, and even in beleaguered Detroit.

The economic advantage that has already begun to accrue to walkable places can be attributed to three key factors. First, for certain segments of the population, chief among them young "creatives," urban living is simply more appealing; many wouldn't be caught dead anywhere else. Second, massive demographic shifts occurring right now mean that these pro-urban segments of the population are becoming dominant, creating a spike in demand that is expected to last for decades. Third, the choice to live the walkable life generates considerable savings for these households, and much of these savings are spent locally. I will address each of these factors in turn.

THE WALKING GENERATION

When I worked for the town planning firm DPZ• in Miami in the nineties, everyone drove to the office, without exception. Taking transit or bicycling made no sense at all, as the buses took forever and the biking was worse than perilous. In more recent visits, I learned that a significant segment of the young designer workforce now bikes or rides the bus, even though the conditions for either are hardly better.

These are the same folks who have put a composting bin in the office kitchen … so are they just the exceptions to the rule?

It turns out that since the late nineties, the share of automobile miles driven by Americans in their twenties has dropped from 20.8 percent to just 13.7 percent. And if one looks at teens, future shifts seem likely to be greater. The number of nineteen-year-olds who have opted out of earning driver's licenses has almost tripled since the late seventies, from 8 percent to 23 percent.[1] This statistic is particularly meaningful when one considers how the American landscape has changed since the seventies, when most American teens could walk to school, to the store, and to the soccer field, in stark contrast to the realities of today's autocentric sprawl.

This trend began well before the recession of 2008 and subsequent fuel spikes, and is seen as cultural, not economic. Market researchers J. D. Power—hardly part of the anticar lobby—report that "online discussions by teens indicate shifts in perceptions regarding the necessity of and desire to have cars."[2] In "The Great Car Reset," Richard Florida observes: "Younger people today … no longer see the car as a necessary expense or a source of personal freedom. In fact, it is increasingly just the opposite: not owning a car and not owning a house are seen by more and more as a path to greater flexibility, choice, and personal autonomy."[3] These driving trends are only a small part of a larger picture that has less to do with cars and more to do with cities, and specifically with how young professionals today view themselves in relation to the city, especially in comparison to previous generations.

Born as the baby boom ended, I grew up watching three television shows almost daily: *Gilligan's Island*, *The Brady Bunch*, and *The Partridge Family*. While *Gilligan's Island* may have had little to say about urbanism, the other two were extremely instructive. They idealized the mid-twentieth-century suburban standard of low-slung houses on leafy lots, surrounded by more of the same. This was normal and good. As a would-be architect, I was particularly susceptible to the charms of Mike Brady's self-built split-level. This is not to say that there were no urban shows on my television set. I saw a good amount of four: *Dragnet*, *Mannix*, *The Streets of San Francisco*, and *Hawaii 5-0*—all focused on one subject: crime.•

Now, contrast my experience growing up in the seventies with that of a child growing up in or around the nineties, watching *Seinfeld*, *Friends*, and, eventually, *Sex and the City*. In these shows, the big city (in all cases New York) was lovingly portrayed as a largely benevolent and always interesting force, often a character and coconspirator in its own right. The most urban of American cities was the new normal, and certainly good.

The first thing that I take away from this comparison is that I watched far too much television as a child. But the real point here is that today's young professionals grew up in a mass culture—of which TV was only one part—that has predisposed them to look favorably upon cities; indeed, to aspire to live in them. I grew up in the suburbs watching shows about the suburbs. They grew up in the suburbs watching shows about the city. My complacency has been replaced by their longing.

This group, the *millennials*, represent the biggest population bubble in fifty years. Sixty-four percent of college-educated millennials choose first where they want to live, and only then do they look for a job.[4] Fully 77 percent of them plan to live in America's urban cores.[5]

A DEMOGRAPHIC PERFECT STORM

Meanwhile, the generation raised on *Friends* is not the only major cohort looking for new places to live. There's a larger one: the millennials' parents, the front-end boomers. They are citizens that every city wants—significant personal savings, no schoolkids.

And according to Christopher Leinberger, the Brookings Institution economist who first brought my attention to the *Brady Bunch/Friends* phenomenon, empty nesters want walkability:

> At approximately 77 million Americans, they are fully one-quarter of the population. With the leading edge of the boomers now approaching sixty-five years old, the group is finding that their suburban houses are too big. Their child-rearing days are ending, and all those empty rooms have to be heated, cooled, and cleaned, and the unused backyard maintained. Suburban houses can be socially isolating, especially as aging eyes and slower reflexes make driving everywhere less comfortable. Freedom for many in this generation means living in walkable, accessible communities with convenient transit linkages and good public services like libraries, cultural activities, and health care.[6]

In the 1980s, my city-planning colleagues and I began hearing from sociologists about something called a NORC, a naturally occurring retirement community. Over the past decade, I have watched a growing number of my parents' generation abandon their large-lot houses to resettle in mixed-use urban centers. My own parents finally jumped ship last year, moving from leafy Belmont Hill, Massachusetts, to only-slightly-less-leafy but much more walkable Lexington Center. For them, that increased walkability means all the difference between an essentially housebound existence and what we all hope will be several decades of continued independence.

On the cusp of their eighties, my parents could be considered late adopters. But as pre-boomers, they represent a trickle of what is to become a torrent. Leinberger notes how, starting now, an average of 1.5 million Americans will be turning sixty-five every year, quadruple the rate of a decade ago.[7] This rate will not begin to plateau until 2020 and we will not see it return to current levels until 2033.

In combination with their independent children, these retiring boomers will numerically overwhelm those families of child-rearing age who typically prefer the suburbs. This upcoming convergence represents "the biggest demographic event since the baby boom itself."[8] Of the 101 million new households expected to take shape between now and 2025, fully 88 percent are projected to be childless. This is a dramatic change from 1970, when almost half of all households included children.• These new adults-only households won't give a hoot about the quality of local schools or the size of their backyards. "This fact will open up many possibilities," Leinberger observes.[9]

As that current statistical oddity, a parent of young children, I often advocate for stronger public schools and neighborhood parks to benefit families. I remind people that a community cannot fully thrive in the absence of any generational cohort, since we all support one another. I like to quote David Byrne: "If we can build a successful city for children, we can build a successful city for all people."[10] This is true enough, but I am often reminded that I lived comfortably for a full decade in one of the most extreme exceptions to that rule, Miami's South Beach, where I could easily go for a month at a time without a stroller sighting. Not one adult in my neighborhood appeared to be between thirty-five and fifty-five, and none seemed (productively) fertile. Yet South Beach was and remains a great place physically, socially, and economically. Demographically speaking, South Beach is the future of many American cities.

That seems to be the case in walkable Washington, D.C., where the past decade has seen a 23 percent

uptick in the number of residents between twenty and thirty-four, simultaneous with an increased number of adults in their fifties and early sixties. Meanwhile, the number of children under fifteen has dropped by 20 percent.[11]

Clearly, Leinberger is optimistic about the larger impact of these population trends on cities. Writing in *Grist*, he concludes that "meeting the pent-up demand for walkable urban development will take a generation. It will be a boon to the real estate industry and put a foundation under the American economy for decades, just as the construction of low-density suburbs did during the last half of the 20th century."[12] Whether or not it can salvage our struggling economy, he makes a convincing case that people will be moving back to the city.

The question that remains is: Will they be moving back to your city, or to someone else's? The answer may well lie in its walkability.

Christopher Leinberger was once the owner of Robert Charles Lesser & Co., the largest real estate advisory firm in the United States, which means that he helped to build a lot of sprawl. He is now convinced that much of suburbia is poised to become "The Next Slum."[13]

In order to study real estate performance, Leinberger divides the American built environment into two categories: *walkable urbanism* and *drivable sub-urbanism.*• In the Detroit region, he finds that housing in walkable urbanism fetches a 40 percent price premium over similar housing in drivable sub-urbanism; in the Seattle region, that premium is 51 percent; in Denver, it's 150 percent. New York City, unsurprisingly, tops the list at 200 percent—that is to say, people are paying three times as much per square foot for apartments in walkable neighborhoods as for comparable suburban houses. In most markets, the demand for walkable urbanism dramatically outpaces the supply: in Atlanta, only 35 percent of poll respondents who want to live in a walkable urban place are able to find and afford it.[14]

A similar dynamic can be found at work for commercial properties. In Washington, D.C., walkable office space recently leased at a 27 percent premium over drivable suburban office space and had single-digit rather than double-digit vacancy rates. *The Wall Street Journal* has confirmed similar trends nationwide: while the suburban office vacancy rate has jumped 2.3 points since 2005, occupancy in America's downtowns has held steady.[15]

Looking at these numbers, Leinberger concludes:

> The metropolitan area that does not offer walkable urbanism is probably destined to lose economic development opportunities; the creative class will gravitate to those metro areas that offer multiple choices in living arrangements.… As consumer surveys in downtown Philadelphia and Detroit in 2006 have shown, this seems to be particularly true for the well-educated, who seem to have a predilection for living in walkable urban places.[16]

This growing demand for pedestrian-friendly places is reflected in the runaway success of Walk Score, the website that calculates neighborhood walkability.• It was started on a lark in 2007 by Matt Lerner, Mike Mathieu, and Jesse Kocher, three partners in a software company with the incongruously automotive name of Front Seat. "I had heard a story on NPR about food miles in England—labeling food with how far it had to travel to get to you," Lerner told me recently, "and I thought, why not instead measure house miles: how many miles from your house you had to go for daily errands."

Addresses are ranked in five categories, with a score of 50 needed to cross the threshold from *car dependent* to *somewhat walkable*. Seventy points earns a *very walkable* ranking, and anything above 90 qualifies as a *walker's paradise*. San Francisco's Chinatown earns a 100, as does NYC's Tribeca, while Los Angeles's Mulholland Drive rates a 9. South Beach in Miami gets a 92. Nike's headquarters in

Beaverton, Oregon, comes in at a *car dependent* 42, while the street address of the nationally acclaimed "Walking Guru" Leslie Sansone, of New Castle, Pennsylvania, has a Walk Score of 37.

Tellingly, Walk Score has become a big hit with real estate agents. Driven by their demand, the Front Seat team has recently developed Walk Score Professional, a subscription site that already boasts links from more than ten thousand other websites, most of them belonging to realtors.

I spoke with one of these agents, Eva Otto, whose face adorns a testimonial on the Walk Score homepage. She is confident that "in a place like Seattle, walkability is the make or break for some buyers. It can add 5 to 10 percent to a person's willingness to pay for a house." For each property she handles, she places the Walk Score website amenity map inside the house in an obvious place. She comments that her buyers are increasingly aware of "how surprising and delightful your quality of life can be when you don't have to get into a car to go every place in your life besides home."

If Walk Score is so useful in helping people decide where to live, then it can also help us determine how much they value walkability. Now that it has been around for a few years, some resourceful economists have had the opportunity to study the relationship between Walk Score and real estate value, and they have put a price on it: five hundred to three thousand dollars *per point*.

In his white paper for CEOs for Cities, "Walking the Walk: How Walkability Raises Home Values in U.S. Cities," Joe Cortright looked at data for ninety thousand distinct home sales in fifteen markets nationwide, places like Chicago, Dallas, and Jacksonville. After controlling for all other factors that are known to impact house price, he found a clear positive correlation in all but two of those markets. In a typical example, Charlotte, North Carolina, Cortright found that an increase in Walk Score from the metropolitan average of 54 (*somewhat walkable*) to 71 (*very walkable*) correlated with an increase in average house price from $280,000 to $314,000.[17] That's two thousand dollars per point, or two hundred thousand dollars across the full scale. Interestingly, two hundred thousand dollars is about the minimum price you can pay for an empty buildable lot in the more walkable parts of Washington, D.C.

Of course, it's generally useful to back up the data by asking real humans what they want. The market-research firm Belden Russonello & Stewart polled several thousand American adults for the National Association of Realtors, and found the following: "When selecting a community, nearly half of the public (47 percent) would prefer to live in a city or a suburban neighborhood with a mix of houses, shops, and businesses.… Only one in ten say they would prefer a suburban neighborhood with houses only."[18] Given that the vast majority of the American built environment is currently the latter, it is no surprise that the demand for walkable urbanism already outpaces the supply. This disparity is only going to get bigger.

THE WALKABILITY DIVIDEND

In 2007, Joe Cortright, the fellow responsible for the Walk Score value study cited above, published a report called "Portland's Green Dividend," in which he asked the question: What does Portland get for being walkable? Quite a lot, it turns out.

To set the stage, we should describe what makes Portland different. Clearly, it is not Manhattan. It is not particularly big or particularly small and its residential density, by American standards, is pretty normal. It has attracted a good amount of industry lately, but has shown no great historical predisposition to do so, nor is it gifted with mineral wealth. It rains a lot in Portland and, interestingly, locals pride themselves on not using umbrellas. Perhaps most fascinating is the way that Portlanders refuse to disobey DON'T WALK signs, even if it's 1:00 a.m. on a tiny two-lane street swathed in utter silence … and even if a blithe east-coaster is striding happily into the intersection (I'm not naming names here).

But what really makes Portland unusual is how it has chosen to grow. While most American cities were building more highways, Portland invested in transit and biking. While most cities were reaming out their roadways to speed traffic, Portland implemented a Skinny Streets program. While most American cities were amassing a spare tire of undifferentiated sprawl, Portland instituted an urban growth boundary. These efforts and others like them, over several decades—a blink of the eye in planner time—have changed the way that Portlanders live.•

This change is not dramatic—were it not for the roving hordes of bicyclists, it might be invisible—but it is significant. While almost every other American city has seen its residents drive farther and farther every year and spend more and more of their time stuck in traffic, Portland's vehicle miles traveled per person peaked in 1996. Now, compared to other major metropolitan areas, Portlanders on average drive 20 percent less.[19]

Small change? Not really: according to Cortright, this 20 percent (four miles per citizen per day) adds up to $1.1 billion of savings each year, which equals fully 1.5 percent of all personal income earned in the region. And that number ignores time not wasted in traffic: peak travel times have actually fallen from 54 minutes per day to 43 minutes per day.[20] Cortright calculates this improvement at another $1.5 billion. Add those two dollar amounts together and you're talking real money.

What happens to these savings? Portland is reputed to have the most independent bookstores per capita and the most roof racks per capita. The city is also said to have the most strip clubs per capita. These claims are all exaggerations, but they reflect a documented above-average consumption of recreation of all kinds. Portland has more restaurants per capita than all other large cities except Seattle and San Francisco. Oregonians also spend considerably more than most Americans on alcohol,[21] which could be a good thing or a bad thing, but in any case makes you glad they are driving less.

More significantly, whatever they are used for, these savings are more likely to stay local than if spent on driving. Almost 85 percent of money expended on cars and gas leaves the local economy[22]—much of it, of course, bound for the pockets of Middle Eastern princes. A significant amount of the money saved probably goes into housing, since that is a national tendency: families that spend less on transportation spend more on their homes,[23] which is, of course, about as local as it gets.

The housing and driving connection is an important one, and has been the subject of much recent study, especially since transportation costs have skyrocketed. While transportation used to absorb only one-tenth of a typical family's budget (1960), it now consumes more than one in five dollars spent.• All told, the average American family now spends about $14,000 per year driving multiple cars.[24] By this measure, this family works from January 1 until April 13 just to pay for its cars. Remarkably, the typical "working" family, with an income of $20,000 to $50,000, pays more for transportation than for housing.[25]

This circumstance exists because the typical American working family now lives in suburbia, where the practice of drive-'til-you-qualify reigns supreme. Families of limited means move farther and farther away from city centers in order to find housing that is cheap enough to meet bank lending requirements. Unfortunately, in doing so, they often find that driving costs outweigh any housing savings.[26] This phenomenon was documented in 2006, when gasoline averaged $2.86 per gallon. At that time, households in the auto zone were devoting roughly a quarter of their income to transportation, while those in walkable neighborhoods spent well under half that amount.[27]

No surprise, then, that as gasoline broke $4.00 per gallon and the housing bubble burst, the epicenter of foreclosures occurred at the urban periphery, "places that required families to have a fleet of cars in order to participate in society, draining their mortgage carrying capacity," as Chris Leinberger notes. "Housing prices on the fringe tended to drop at twice the metropolitan average while walkable urban housing tended to maintain [its] value and [is] coming back nicely in selected markets today."[28] Not only

have city centers fared better than suburbs, but walkable cities have fared better than drivable ones. Catherine Lutz and Anne Lutz Fernandez note that "the cities with the largest drops in housing value (such as Las Vegas, down 37 percent) have been the most car-dependent, and the few cities with housing prices gains … have good transit alternatives."[29]

This is bad news for Orlando and Reno, but it's good news for Portland … and also for Washington, D.C., which continues to benefit from earlier investments in transit. From 2005 to 2009, as the District's population grew by 15,862 people, car registrations fell by almost 15,000 vehicles.• The National Building Museum, in its Intelligent Cities Initiative, notes that this reduction in auto use results in as much as $127,275,000 being retained in the local economy each year.■

Those are the economic benefits of not driving. Are there additional economic benefits of walking, biking, and taking transit instead? The evidence here is a little more scarce, but the indications are positive. Ignoring the health benefits, there is a clear distinction to be made in the category of job creation. Road and highway work, with its big machines and small crews, is notoriously bad at increasing employment. In contrast, the construction of transit, bikeways, and sidewalks performs 60 percent to 100 percent better. A study of President Obama's American Recovery and Reinvestment Act documented a 70 percent employment premium for transit over highways. By this measure, that job-creation program would have created fifty-eight thousand more jobs if its road-building funds had gone to transit instead.▲

How does this translate at the local level? Portland has spent roughly $65 million on bicycle facilities over the past several decades. That is not a lot of money by infrastructure standards—it cost more than $140 million to rebuild just one of the city's freeway interchanges.[30] Yet, in addition to helping to boost the number of bicyclists from near normal to fifteen times the national average,• this investment can be expected to have created close to nine hundred jobs, about four hundred more than would have come from spending it on road building.

But the real Portland story is neither its transportation savings nor its bikeway employment, but something else: young, smart people are moving to Portland in droves. According to Cortright and coauthor Carol Coletta, "Over the decade of the 1990s, the number of college-educated 25 to 34 year-olds increased 50 percent in the Portland metropolitan area—five times faster than in the nation as a whole, with the fastest increase in this age group being recorded in the city's close-in neighborhoods."■ There is another kind of walkability dividend, aside from resources saved and resources reinvested: resources attracted by being a place where people want to live. This has certainly been the case in San Francisco, where headhunters for companies like Yelp and Zynga (the social-gaming developers who created FarmVille) actively use urbanism as a recruiting tool. "We're able to attract creative and tech talent because we are in the city," acknowledges Colleen McCreary, Zynga's head of human resources.[31]

Ultimately, though, it would seem that urban productivity has even deeper causes. There is mounting evidence that dense, walkable cities generate wealth by sheer virtue of the propinquity that they offer. This is a concept that is both stunningly obvious—cities exist, after all, because people benefit from coming together—and tantalizingly challenging to prove.• This hasn't kept it from the lips of some of our leading thinkers, including Stewart Brand, Edward Glaeser, David Brooks, and Malcolm Gladwell.

Speaking at the Aspen Institute, David Brooks pointed out how most U.S. patent applications, when they list similar patents that influenced them, point to other innovators located less than twenty-five miles away. He also mentioned a recent experiment at the University of Michigan, where "researchers brought groups of people together face to face and asked them to play a difficult cooperation game. Then they organized other groups and had them communicate electronically. The face-to-face groups thrived. The electronic groups fractured and struggled."[32]

Face-to-face collaboration is, of course, possible in any setting. But it is easier in a walkable city.

Susan Zeilinski, managing director of the University of Michigan's SMART Center, puts it this way: "In Europe you can get five good meetings done in a day. In Australia, maybe three, and in Atlanta, maybe two, because you've gone way, way farther and way, way faster but you haven't been in an accessible place that allows a lot to happen. You've spent a lot of time sitting in traffic."[33] This discussion raises a larger theoretical question that scientists have just begun to take on: are there underlying universal rules that govern the success of a place?

The theoretical physicists Geoffrey West and Luis Bettencourt believe so. They do not believe in urban theory—"a field without principles"—they are interested only in math. "What the data clearly shows," West notes, "is that when people come together they become much more productive."[34] Do the same physical laws work in reverse? Writing about West's research in *The New York Times Magazine*, Jonah Lehrer notes:

> In recent decades, though, many of the fastest-growing cities in America, like Phoenix and Riverside, Calif., have given us a very different urban model. These places have traded away public spaces for affordable single-family homes, attracting working-class families who want their own white picket fences. West and Bettencourt point out, however, that cheap suburban comforts are associated with poor performance on a variety of urban metrics. Phoenix, for instance, has been characterized by below-average levels of income and innovation (as measured by the production of patents) for the last 40 years.[35]

These findings align with a recent Environmental Protection Agency study that found, state by state, an inverse relationship between vehicle travel and productivity: the more miles that people in a given state drive, the weaker it performs economically.• Apparently, the data are beginning to support the city planners' bold contention that time wasted in traffic is unproductive.

In contrast, the Portland metro area is now home to more than twelve hundred technology companies. Like Seattle and San Francisco, it is one of the places where educated millennials are heading in disproportionate numbers. This phenomenon is what the demographer William Frey has in mind when he says: "A new image of urban America is in the making. What used to be white flight to the suburbs is turning into 'bright flight' to cities that have become magnets for aspiring young adults who see access to knowledge-based jobs, public transportation and a new city ambiance as an attraction."[36]

The conventional wisdom used to be that creating a strong economy came first, and that increased population and a higher quality of life would follow. The converse now seems more likely: creating a higher quality of life is the first step to attracting new residents and jobs. This is why Chris Leinberger believes that "all the fancy economic development strategies, such as developing a biomedical cluster, an aerospace cluster, or whatever the current economic development 'flavor of the month' might be, do not hold a candle to the power of a great walkable urban place."[37]

WHY JOHNNY CAN'T WALK

The obesity bomb; Clearing the air; American car-nage; Tense and lonely

The best day for being a city planner in America was July 9, 2004. That's when Howard Frumkin, Lawrence Frank, and Richard Jackson published their book *Urban Sprawl and Public Health.*

Until that day, the main arguments for building walkable cities were principally aesthetic and social. More significantly, almost nobody but the planners was making them. But it turns out that while we were shouting into the wilderness about the frustrations, anomie, and sheer waste of suburban sprawl, a small platoon of physicians was quietly doing something much more useful: they were documenting how our built environment was killing us.

For Dr. Jackson, the epiphany came in 1999, when he was driving on Atlanta's Buford Highway—voted by the Congress for the New Urbanism as one of the ten "Worst Streets in America"[1]—a seven-laner flanked by low-income garden apartments, "with no sidewalks and two miles between traffic lights."[2] There, by the side of the road, in the ninety-five-degree afternoon, he saw a woman in her seventies, struggling under the burden of two shopping bags. He tried to relate her plight to his own work as an epidemiologist:

> If that poor woman had collapsed from heat stroke, we docs would have written the cause of death as heat stroke and not lack of trees and public transportation, poor urban form, and heat-island effects. If she had been killed by a truck going by, the cause of death would have been "motor-vehicle trauma," and not lack of sidewalks and transit, poor urban planning, and failed political leadership. That was the "aha!" moment for me. Here I was focusing on remote disease risks when the biggest risks that people faced were coming from the built environment.[3]

Jackson, who has more recently served as California governor Arnold Schwarzenegger's state public health adviser, spent the next five years quantifying how so much of what ails us can be attributed directly to the demise of walkability in the auto age. The resulting book finally put some technical meat on the bones of the planning profession's admonitions against sprawl.

And the numbers are compelling. Despite spending one dollar out of six on health care, the United States has some of the worst health statistics in the developed world. According to the U.S. Centers for Disease Control (CDC), fully one-third of American children born after 2000 will become diabetics. This is due partly to diet, but partly to planning: the methodical eradication from our communities of *the useful walk* has helped to create the least active generation in American history. This insult is compounded by the very real injuries that result from car crashes—the greatest killer of children and young adults nationwide—as well as an asthma epidemic tied directly to vehicle exhaust. Comparison of walkable cities and auto-dependent suburbs yields some eye-opening statistics—for example, that transit users are more than three times as likely as drivers to achieve their CDC-recommended thirty minutes of daily physical activity.[4] Increasingly, it is becoming clear that the American health-care crisis is largely an urban-design crisis, with walkability at the heart of the cure.

Particularly affected have been our children. While fully 50 percent walked to school in 1969, fewer than 15 percent do now.• And sometimes when children do walk to school, their parents are visited by the police: a Salt Lake City newspaper carried in December 2010 the story of Noah Talbot, of South Jordan, who was picked up by the police on the way to school and his mother issued a citation for child neglect.[5] Jackson and his coauthors note how "children are increasingly medicated for inattentiveness or hyperactivity, even as many are losing their opportunities for exercise at school or in the neighborhood. There are third-grade classes in which as many as a third of the boys are on Ritalin or similar medications."[6]

To summarize the findings of *Urban Sprawl and Public Health*—which are echoed by a growing number of epidemiologists nationwide—the inactivity-inducing convenience, often violent speed, and toxic exhaust of our cars have contributed mightily to the circumstance that "for the first time in history, the current generation of youth will live shorter lives than their parents."[7]

THE OBESITY BOMB

In any meaningful discussion about American health (and health care), obesity has to be front and center.▪ In the mid-1970s, only about one in ten Americans was obese, which put us where much of Europe is right now. What has happened in the intervening thirty years is astonishing: by 2007, that rate had risen to one in three,[8] with a second third of the population "clearly overweight."[9] The childhood obesity rate has almost tripled since 1980 and the rate for adolescents has more than quadrupled.[10] According to the rules of the U.S. military, 25 percent of young men and 40 percent of young women are too fat to enlist.•

As recently as 1991, no states had adult obesity rates over 20 percent. By 2007, only one state, Colorado, was *under* 20 percent.[11] Projecting current trends forward, it would seem that 100 percent of the population will be obese by 2080, a year that my children will probably live to see—but perhaps not if they are obese.

In terms of actual weight, men are now seventeen pounds heavier than they were in the late 1970s, and women nineteen pounds heavier. This means that, independent of population growth, as a nation we have gained 5.5 billion pounds. The real problem, of course, is not obesity itself, but all the other maladies that obesity causes or makes worse.▪ These include coronary disease, hypertension, a variety of cancers—including colorectal and endometrial—gallstones, and osteoarthritis. Excessive weight now kills more Americans than smoking.[12]

Over the past decade, there has been a series of studies that attribute obesity and its related illnesses directly to the automotive lifestyle and, better yet, to the automotive landscape.• One effort found that for every additional five minutes Atlanta-area residents drove each day, they were 3 percent more likely to be obese.[13] Another showed that drivers who switch to public transit drop an average of five pounds.[14] A third, in San Diego, reported that 60 percent of residents in a "low-walkable" neighborhood were overweight, compared to only 35 percent in a "high-walkable" neighborhood.[15] Another Atlanta study found that "the proportion of obese white males declined from 23 percent to 13 percent as neighborhood residential density increased from less than two to more than eight dwellings per acre."[16] These are careful academic studies that control for age, income, and the other factors that correlate with body mass.

Finally, a six-year analysis of 100,000 Massachusetts residents found that the lowest body mass index averages were located in Boston and its inner-ring suburbs, while the highest could be found in the "car-dependent" outer ring surrounding Interstate 495. *The Boston Globe* noted that "health officials suggest these higher rates are due, in part, to a lack of opportunities for everyday recreation and the time-

squeezed lifestyle of many residents who have long commutes."[17]

I am wary of confusing causality with correlation, and it would be fair to say that heavier people are probably more likely to prefer driving over walking, and are therefore also more likely to prefer sprawl over urban neighborhoods. It is theoretically possible that, rather than suburbs making people fat, fat people make suburbs. But only a soulless pundit funded by the automotive industry—and there are several•—would claim that people are not more likely to be healthy in environments that invite walking.

You can tell that an idea has reached its tipping point when it makes enemies, and the sprawl-obesity connection finally has. The American Dream Coalition ("Protecting Freedom, Mobility, and Affordable Homeownership"), a consortium of automotive and sprawl-building interests, has come up with the fairly hilarious concept of the *Compactorizer.* As celebrated on their website in the (stereotypically effeminate) voice of the fictional Biff Fantastic:

> Urban planners and metrosexuals agree that suburbs make you fat! With the *Compactorizer*, you'll move out of boring and subtly racist suburban homes and into smallish apartments in high-density transit-oriented developments. Only the *Compactorizer* uses a patented planning doctrine to create noisy nights, random crimes, and panhandler harassment, triggering the high-stress and abnormal dietary patterns so important for rapid weight loss.[18]

As both an urban planner and a purported metrosexual, I can feel my credibility tanking here. But I have to admit that this piece is more humorous than it is offensive and it appropriately pokes fun at an antisuburban snobbery that I probably share. But, ultimately, I have to ask myself: whom do I trust more: the doctors—who have nothing to gain either way—or the sprawl-builders? I'm going with the doctors.

CLEARING THE AIR

During the 1996 Olympics, more than 2 million visitors descended on the city of Atlanta, effectively increasing the city's population by 50 percent. Most of these visitors—I was among them—spent many hours huffing around the hot, crowded sports venues. Yet, during this time, asthma hospitalizations surprisingly declined by a full 30 percent.[19] What happened?

The difference was walking. Warned of the impossibility of motoring around the downtown during the games, many driving commuters took transit and walked instead. At a time when Atlanta was "one of the nation's worst violators of federal standards for ground-level ozone, with most of the problem caused by motor vehicle emissions,"[20] pollution levels dropped precipitously.•

Pollution isn't what it used to be. American smog now comes principally from tailpipes, not factories. It is considerably worse than it was a generation ago, and it is unsurprisingly worst in our most auto-dependent cities, like Los Angeles and Houston. Phoenix put Atlanta to shame in 2007, with three full months of days in which it was deemed unhealthy for the general public to leave their homes.[21]

For this reason, asthma is dramatically on the rise. Almost one in fifteen Americans suffers from asthma, and the economic costs of the disease are estimated at $18.2 billion annually. About fourteen Americans die each day from asthma attacks, which is three times the rate of 1990.[22]

Of course, a community's auto dependence is not the only factor that contributes to asthma. But the 2011 WebMD list of the best and worst cities for asthma[23] speaks to a connection between walkability and breathing easier: residents of the five "worst" cities (Richmond, Knoxville, Memphis, Chattanooga, and Tulsa) drive 27 percent farther each day than residents of the five "best" (Portland, San Francisco,

Colorado Springs, Des Moines, and Minneapolis).•

AMERICAN CAR-NAGE

Even if we were to dispute the notion that walking is good for you, it is indisputable that cars kill a lot of people. Car crashes have killed over 3.2 million Americans, considerably more than all of our wars combined.[24] They are the leading cause of death for all Americans between the ages of one and thirty-four,[25] and their monetary cost to the nation is estimated to be hundreds of billions of dollars annually.■

Most people take the risks of driving for granted, as if they were some inevitable natural phenomenon. We don't bother with hand-wringing over the half-a-percent chance that our lives will end in a car crash[26] or the roughly one-in-three chance that we will eventually be seriously injured in one,• since these risks seem unavoidable. But the numbers from other developed nations tell a different story. While the United States in 2004 suffered 14.5 traffic fatalities per 100,000 population, Germany, with its no-speed-limit autobahns, suffered only 7.1. Denmark rated a 6.8, Japan a 5.8, and the U.K. hit 5.3.[27] And who beat them all? New York City, with a rate of 3.1. Indeed, since September 11, 2001, New York has saved more lives in traffic than it lost on 9/11.■

If our entire country shared New York City's traffic statistics, we would prevent more than twenty-four thousand deaths a year.▲ San Francisco and Portland both compete with New York, with rates of 2.5 and 3.2 deaths per 100,000 population, respectively. Meanwhile, Atlanta comes in at 12.7, and anti-urban Tampa at a whopping 16.2.[28] Clearly, it's not just how much you drive, but where you drive and, more accurately, how those places were designed. Older, denser cities have much lower automobile fatality rates than newer, sprawling ones. It is the places shaped around automobiles that seem most effective at smashing them into each other.

I provide all this information to communicate the point that, while we Americans may take our great risk of automobile injury for granted, it is actually something that is well within our control—in the long term, as a function of how we design places, and in the short term, as a function of where we choose to live. This discussion becomes particularly ironic when we consider how many people through the decades have decamped from the city into the suburbs ostensibly for the safety of their families. Dr. Jackson is famously fond of asking his audiences "In what kind of community are you most likely to end up dead in a pool of blood?"[29] He points to the work of Alan Durning, who analyzed the combined risk of dying from two causes—traffic crashes and crime—in Seattle, Portland, and Vancouver, British Columbia. He found that, on average, if you add the two factors together, you are 19 percent safer in the inner city than in the outer suburbs.•

More recently, several more thorough studies have been completed by William Lucy at the University of Virginia, looking at auto accidents and murder by strangers. In one, he found that the ten safest places in the state of Virginia were eight of its most densely populated cities and the two counties abutting Washington, D.C., while the ten most dangerous places were all low-population counties.[30] In another, he compared crash and crime statistics in eight large American cities between 1997 and 2000. Here the data produced more subtle results. The basic theory held true: car crashes far outweighed murder by strangers as a cause of death in all locations and, in older cities like Pittsburgh, the inner cities were considerably safer overall. But in more modern places like Dallas and Houston, where the downtowns are largely unwalkable, the city car-crash statistics were almost as bad as in the suburbs. Even with its fourteen annual traffic deaths per 100,000 population, however, Dallas was still safer overall than half of its surrounding counties.•

TENSE AND LONELY

Jacqueline McFarland is a licensed clinical social worker who specializes in the driving stresses of Atlanta commuters. She teaches her patients what are called Emotional Freedom Techniques (EFT) to help them calm down in traffic. “Basically, it’s tapping on acupressure points on the body, which clears up emotional issues.”[31]

Let’s hope it works. A German study found that “an unusually high percentage of people having heart attacks had spent time in traffic congestion on the day they were stricken.” The study concluded that an hour spent driving triples your risk of heart attack in the hours that follow.[32] A Belgian paper published in *The Lancet* found that traffic exposure accounts for more heart attacks worldwide than any other activity, even including physical exertion.[33]

Closer to home, a Miami study found that “after driving their cars across the city for forty-five minutes, university students had higher blood pressure, higher heart rates, and lower frustration tolerance.” This study is mentioned in *Urban Sprawl and Public Health*, where Dr. Jackson and his colleagues go on at length about driving stress, road rage, and their significant impacts on our national well-being. And the numbers are not insignificant—but let’s step back from health for a minute and talk about happiness. Is motoring around and around really how we want to be spending so much of our time?

While many of us love driving, we hate commuting. Unsurprisingly, people with longer commutes report “lower satisfaction with life” than those who drive less.[34] One study found that “a 23-minute commute had the same effect on happiness as a 19 percent reduction in income.” And twenty-three minutes is hardly a long commute—it’s a bit below the national average. In another poll, 5 percent of respondents said that they would be “willing to divorce their spouse if that meant they could stop commuting and work from home instead.”[35]

The Princeton psychologist Daniel Kahneman reports that commuting ranks as people’s least favorite regular activity, less favored than housework or child care. “Intimate relations” scored highest—big surprise there—followed closely by socializing after work.[36]

Commuting unfortunately cuts into both. In his book *Bowling Alone*, the Harvard professor Robert Putnam documents a marked decline in American social capital, and notes that commute time is more predictive than almost any other variable he measured in determining civic engagement. He states that “each ten additional minutes in daily commuting time cuts involvement in community affairs by ten percent—fewer public meetings attended, fewer committees chaired, fewer petitions signed, fewer church services attended, and so on.”[37]

This finding seems perfectly logical—there’s only so much time in the day, after all—but it is only one part of a much larger picture that includes not only how long it takes to get home, but also in what sort of neighborhood that home is located. Much civic engagement is physical, grown from interaction on the street. Jane Jacobs put it this way: “Lowly, unpurposeful, and random as they may appear, sidewalk contacts are the small change from which a city’s wealth of public life may grow.”•

About now we could use some good news, so let’s turn to Dan Buettner, the charismatic National Geographic host and bestselling author responsible for *The Blue Zones: Lessons for Living Longer from the People Who’ve Lived the Longest*. After a tour of the world’s longevity hot spots, Buettner takes us through the “*Power Nine*: the lessons from the Blue Zones, a cross cultural distillation of the world’s best practices in health and longevity.” Lesson One? “Move Naturally.” He explains: “Be active without having to think about it.… Longevity all-stars don’t run marathons or compete in triathlons; they don’t transform themselves into weekend warriors on Saturday morning. Instead, they engage in regular, low-intensity physical activity, often as a part of a daily work routine.”• Buettner quotes Robert Kane, M.D.,

the director of the Minnesota Geriatric Education Center, who says, “Rather than exercising for the sake of exercising, try to make changes to your lifestyle. Ride a bicycle instead of driving. Walk to the store instead of driving.… Build that into your lifestyle.”

Like most writers on the subject, Buettner and his sources neglect to discuss how these “lifestyle” choices are inevitably a function of the design of the built environment. They may be powerfully linked to place—the Blue Zones are zones, after all—but there is scant admission that walking to the store is more possible, more enjoyable, and more likely to become habit in some places than in others. It is those places that hold the most promise for the physical and social health of our society.

Enrique Peñalosa, the former mayor of Bogotá, Colombia, sees things in a much simpler light: “God made us walking animals—pedestrians. As a fish needs to swim, a bird to fly, a deer to run, we need to walk, not in order to survive, but to be happy.”[38] That thought is beautiful, perfectly obvious, and probably impossible to prove. But we do know that we need to be active in order to be healthy and that walking is the easiest way for most humans to be usefully active. Let’s make it easier.

THE WRONG COLOR GREEN

You can't spell carbon without CAR; Missing the forest for the trees; Manhattan as Mecca; Happy urbanism

In 2001, Scott Bernstein, at the Center for Neighborhood Technology in inner-city Chicago, produced a set of maps that are still changing the way we think about our country. In these maps, remarkably, the red and the green switched places. This reversal, perhaps even more than the health discussion, threatens to make walkability relevant again.

By red and green, I am referring to carbon emissions. On typical carbon maps, areas with the greatest amounts of carbon output are shown in bright red, and those with the least are shown in green, with areas in between shown in orange and yellow. Basically, the hotter the color, the greater the contribution to climate change.

Historically, these maps had always looked like the night-sky satellite photos of the United States: hot around the cities, cooler in the suburbs, and coolest in the country. Wherever there are lots of people, there is lots of pollution. A typical carbon map, such as that produced in 2002 by the Vulcan Project at Purdue University, sends a very clear signal: countryside good, cities bad.

For a long time, these were the only maps of this type, and there is certainly a logic in looking at pollution from a location-by-location perspective. But this logic was based on an unconsidered assumption, which is that the most meaningful way to measure carbon is by the square mile. It isn't.

The best way to measure carbon is per person. Places should be judged not by how much carbon they emit, but by how much carbon they cause us to emit. There are only so many people in the United States at any given time, and they can be encouraged to live where they have the smallest environmental footprint. That place turns out to be the city—the denser the better.

For this reason, when Bernstein replaced carbon per square mile with carbon per household, the colors simply flipped. Now the hottest places in each American metropolitan area—and their website shows hundreds, from Abilene to Yuma—are inevitably the outer suburbs. The coolest are smack-dab in the center of town.

To be accurate: Bernstein's maps have a limitation. They do not show full carbon output; they only show CO_2 from household automobile use—data that are much easier to collect. But this limitation turns out to be useful, for several reasons: first, because it causes us to confirm that automobile use is not only the single greatest contributor to our total carbon footprint, but also a reliable predictor of that total; and second, because limiting our greenhouse gas emissions, for many, is a much less pressing issue than our dependence on foreign oil.

YOU CAN'T SPELL CARBON WITHOUT CAR

At last measure, we are sending $612,500 overseas every minute in support of our current automotive lifestyle.[1] Cumulatively, over recent decades, this has amounted to a "massive, irreversible shift in wealth and power from the United States to the petro-states of the Middle East and energy-rich Russia."[2] This

cash transfer, which is quickly working its way up to a third of a trillion dollars each year, is building some truly stunning metro-rail systems in Dubai and Abu Dhabi—our cars are buying their trains. Add to this amount the significant chunk of our $700 billion military budget that is used to protect these questionable foreign interests,• and it's easy to see how our oil appetite could undo us economically long before the oil begins to run dry.

Do electric cars present an answer to this challenge? Certainly hybrids don't. Their marginally improved gas mileage mostly offers a feel-good way to drive more miles in increasingly larger vehicles. I always get angry when I see a "Hybrids Only" municipal parking space, knowing that it welcomes a 21-mpg Chevy Tahoe Hybrid but not a conventional 35-mpg Ford Fiesta.▪ You could (theoretically) drive two 1990 Geo Metros at once and still beat the Tahoe.

In contrast, the all-electric car seems to hold some real promise for curtailing our foreign oil addiction—but at what environmental cost? In most of the United States, an electric-powered car is essentially a coal-powered car,▲ and "clean coal" is of course an oxymoron.[3] Both in its extraction and its combustion—replacing a hydrocarbon with a pure carbon—coal can make oil look positively green.•

To be perfectly accurate, electric cars are currently a bit greener than gasoline cars—*per mile*. Driving one hundred miles in a Nissan Altima results in the emission of 90.5 pounds of greenhouse gases. Driving the same distance in an all-electric Nissan Leaf emits 63.6 pounds of greenhouse gases—a significant improvement. But while the Altima driver pays fourteen cents a mile for fuel, the Leaf driver pays less than three cents per mile,[4] and this difference, thanks to the law of supply and demand, causes the Leaf driver to drive more.

How much more? We don't know. But we do know what happened in Sweden, where aggressive government subsidies have led to the world's highest per-capita sales of "clean" cars. The results are in, and, shockingly, "greenhouse gas emissions from Sweden's transportation sector are up."[5] As reported by Firmin DeBrabander:

> But perhaps we should not be so surprised. What do you expect when you put people in cars they feel good (or at least less guilty) about driving, which are also cheap to buy and run? Naturally, they drive them more. So much more, in fact, that they obliterate energy gains made by increased fuel efficiency.[6]

Electric vehicles are clearly the right answer to the wrong question. This fact becomes even clearer when we note that tailpipe emissions are only one part of the footprint of motoring. As described by the strategic consultant Michael Mehaffy, this footprint includes "the emissions from the construction of the vehicles; the embodied energy of streets, bridges and other infrastructure; the operation and repair of this infrastructure; the maintenance and repair of the vehicles; the energy of refining fuel; and the energy of transporting it, together with the pipes, trucks and other infrastructure that is required to do so." These add an estimated 50 percent more pollution to the atmosphere than emissions alone.[7]

But that's just the beginning. A much larger multiplier effect comes from the way that all of our other, nonautomotive consumption patterns expand as we drive. In *Green Metropolis*, David Owen puts it this way:

> The real problem with cars is not that they don't get enough miles per gallon; it's that they make it too easy for people to spread out, encouraging forms of development that are inherently wasteful and damaging.… The critical energy drain in a typical American suburb is not the Hummer in the driveway; it's everything else the Hummer makes possible—the oversized houses and irrigated

yards, the network of new feeder roads and residential streets, the costly and inefficient outward expansion of the power grid, the duplicated stores and schools, the two-hour solo commutes.[8]

So, while I have gone to great efforts to explain how the way we move is more important than the way we live, it turns out that the way we move largely determines the way we live.

MISSING THE FOREST FOR THE TREES

When we built our new house in Washington, we too did our best to clear the shelves of the sustainability store. We put in bamboo floors, radiant heating, double-thick insulation, dual-flush toilets, a solar water heater, and a twelve-panel 2.5-kilowatt solar photovoltaic system. A pine log crackling in our high-tech wood-burning stove supposedly contributes less pollution to the atmosphere than if it were left to decompose in the forest.

Yet all these gadgets cumulatively contribute only a fraction of what we save by living in a walkable neighborhood. It turns out that trading all of your incandescent lightbulbs for energy savers conserves as much carbon per year as living in a walkable neighborhood does each week.[9] Why, then, is the vast majority of our national conversation on sustainability about the former and not the latter? Witold Rybczynski puts it this way:

> Rather than trying to change behavior to reduce carbon emissions, politicians and entrepreneurs have sold greening to the public as a kind of accessorizing. “Keep doing what you’re doing,” is the message, just add another solar panel, a wind turbine, a bamboo floor, whatever. But a solar-heated house in the suburbs is still a house in the suburbs, and if you have to drive to it—even in a Prius—it’s hardly green.[10]

We planners have taken to calling this phenomenon *gizmo green*: the obsession with “sustainable” products that often have a statistically insignificant impact on the carbon footprint when compared to our location. And, as already suggested, our location’s greatest impact on our carbon footprint comes from how much it makes us drive.

This point was pounded home in a recent EPA study, “Location Efficiency and Building Type—Boiling It Down to BTUs,”[11] that compared four factors: drivable versus walkable location; conventional construction versus green building; single-family versus multifamily housing; and conventional versus hybrid automobiles. The study made it clear that, while every factor counts, none counts nearly as much as walkability. Specifically, it showed how, in drivable locations, transportation energy use consistently tops household energy use, in some cases by more than 2.4 to 1. As a result, the most green home (with Prius) in sprawl still loses out to the least green home in a walkable neighborhood.[12]

It is important that the EPA is doing its best to share the good news on how location trumps building design, but who is listening? Certainly not the EPA. A mere month after releasing the above study, the agency announced that it was relocating its 672-employee Region 7 Headquarters from downtown Kansas City to the new far-flung suburb of Lenexa, Kansas (Walk Score 28). Why are they moving twenty miles out of town into a former Applebee’s office park? Well, because the building is LEED• (green) certified, of course.[13]

Kaid Benfield, a long-serving environmental watchdog at the Natural Resources Defense Council, did some numbers, and he found that while “an average resident in the vicinity of the current EPA Region 7

headquarters emits 0.39 metric tons of carbon dioxide per month … the transportation carbon emissions associated with the new location are a whopping 1.08 metric tons per person per month … one and a half times the regional average."[14]

These numbers are, of course, just a stand-in for the actual increased carbon footprints of the EPA's staffers, most of whom will probably not move from their current homes. Presuming these employees' houses are distributed around Kansas City in the normal manner, the vast majority will have their commutes lengthened, many by twenty miles or more each way. Those who used to take transit to work will now have to get on the highway.

This would be funny if it weren't so sad. The carbon saved by the new building's LEED status, if any, will be a small fraction of the carbon wasted by its location.▪ This missing the forest for the trees is what David Owen calls "LEED Brain." Many governments and corporations—and they are to be congratulated—have committed themselves to LEED-rated building construction, including the federal government, New York, Chicago, San Francisco, the District of Columbia, and a boatload of others. The list is getting longer every day and seems to have reached a tipping point where you can't get hired as an architect without becoming LEED accredited.

Urban location is indeed one of the factors that contributes to a LEED building rating, but it is only one of many factors, such that the overall carbon savings created by downtown locations are almost always undercounted. And because it's better than nothing, LEED—like the Prius—is a get-out-of-jail-free card that allows us to avoid thinking more deeply about our larger footprint. For most organizations and agencies, it is enough. Unfortunately, as the transportation planner Dan Malouff puts it, "LEED architecture without good urban design is like cutting down the rainforest using hybrid-powered bulldozers."[15]

MANHATTAN AS MECCA

If—in America—dense, transit-served cities are better, then New York is the best. This is the clear and convincing message of David Owen's *Green Metropolis*, certainly the most important environmental text of the past decade. This book deserves a bit more of our attention, so profound is the revolution in thinking that it represents.

As Owen himself notes, the environmental movement in the United States has historically been anti-city, as has so much American thought. This strain traces its roots back to Thomas Jefferson, who described large cities as "pestilential to the morals, the health, and the liberties of man." Not without a sense of humor, he went on: "When we get piled up upon one another in large cities, as in Europe, we shall become as corrupt as in Europe, and go to eating one another as they do there."[16]

Given that the U.S. population in 1780 was less than 1 percent of its current total, it is easy to understand why Jefferson did not see anything but good in its dispersal. With what must have seemed to be both infinite land area and resources, there was no reason not to stretch our legs, especially since the greatest by-product of transportation was fertilizer.

Unfortunately, over the next two hundred years, the American anti-urban ethos remained intact as everything else changed. The desire to be isolated in nature, adopted en masse, led to the quantities and qualities we now call sprawl, which somehow mostly manages to combine the traffic congestion of the city with the intellectual culture of the countryside.[17] Now that the full environmental impacts of suburban development are being measured, a new breed of thinkers is finally turning the old paradigm on its head. These include David Owen—like Jane Jacobs, a mere writer—and the economist Ed Glaeser, who puts it

this way: “We are a destructive species, and if you love nature, stay away from it. The best means of protecting the environment is to live in the heart of a city.”[18]

And no American city performs like New York. Owen’s book, which was originally to be called *Green Manhattan*, is stuffed full of astounding data. The average New Yorker consumes roughly one-third the electricity of the average Dallas resident, and ultimately generates less than one-third the greenhouse gases of the average American. The average resident of Manhattan—New York at its most New Yorky—consumes gasoline “at a rate that the country as a whole hasn’t matched since the mid-1920s.”[19] And so on. We have already discussed the city’s impressive traffic-safety record.

New York is our densest big city and, not coincidentally, the one with the best transit service. All the other subway stations in America put together would not outnumber the 468 stops of the MTA. In terms of resource efficiency, it’s the best we’ve got. But why stop there? Other places, with a variety of densities and transit options, do much better. Sure, New York consumes half the gasoline of Atlanta (326 versus 782 gallons per person per year). But Toronto cuts *that* number in half again, as does Sydney—and most European cities use only half as much as those places. Cut Europe’s number in half and you end up with Hong Kong.[20] If ten Hong Kongers were to move to New York with the goal of keeping their gasoline consumption unchanged, nine of them would have to stay at home.

These numbers become especially meaningful as we consider the impacts of peak oil prices in the years ahead. What city, or country, is likely to be the most competitive in the face of $200-per-barrel oil? Paris is one place that has determined that its future hangs upon its reducing its auto dependence. The city has recently decided to create twenty-five miles of dedicated busways, introduced twenty thousand shared “city bikes” in 1,450 locations, and committed to removing fifty-five thousand parking spaces from the city every year for the next twenty years. These changes sound pretty radical, but they are supported by 80 percent of the population.[21]

HAPPY URBANISM

Stories and numbers like these are truly intimidating, and potentially demotivating. Why even bother trying, when other countries are so far ahead?

Back in 1991, the Sierra Club’s John Holtzclaw studied travel habits in twenty-eight California communities of widely varying residential density. He found, as expected, an inverse relationship between urbanity and driving miles. But, perhaps not expected, he also found his data points distributed around a pretty sharp curve, with most of the gains in efficiency occurring early on. Increasing housing density at the suburban end of the scale had a much greater impact than at the urban end, such that the vast majority of the driving reduction occurred in the switch from large-lot sprawl to densities of ten to twenty units per acre. These densities represent a traditional urbanism of apartments, row houses, and, yes, some freestanding single-family homes. In contrast, the further concentration of households at higher densities—even above one hundred per acre—while helpful, produced less dramatic results.

He subsequently conducted similar studies in New York and Los Angeles, and found the data tracking along almost identical curves. In each case, increasing density from two units per acre to twenty units per acre resulted in about the same savings as the increase from twenty to two hundred.[22] To students of urban form, these outcomes are not that surprising, because ten to twenty units per acre is the density at which drivable sub-urbanism transitions into walkable urbanism. There are of course some (rather horrid tower-in-the-parking-lot) exceptions, but most communities with these densities are also organized as traditional, mixed-use, pedestrian-friendly neighborhoods, the sort of accommodating environment that

entices people out of their cars. Everything above that is icing on the cake.

That means that, while Americans might have a long way to go to match European or Asian sustainability, a little effort can get us a lot closer. But not every American is motivated by concerns about climate change or peak oil and, even among those of us who are, it is not always easy to turn that intention into action. Certainly, unless we hit a national crisis of unprecedented severity, it is hard to imagine any argument framed in the language of sustainability causing many people to modify their behavior. So what will?

The gold standard of quality-of-life rankings is the Mercer Survey, which carefully compares global cities in the ten categories of political stability, economics, social quality, health and sanitation, education, public services, recreation, consumer goods, housing, and climate.

Its rankings shift slightly from year to year, but the top ten cities always seem to include a bunch of places where they speak German (Vienna, Zürich, Düsseldorf, etc.), along with Vancouver, Auckland, and Sydney.[23] These are all places with compact settlement patterns, good transit, and principally walkable neighborhoods. Indeed, there isn't a single auto-oriented city in the top fifty. The highest-rated American cities in 2010, which don't appear until number 31, are Honolulu, San Francisco, Boston, Chicago, Washington, New York, and Seattle.•

The Economist magazine has its own ranking that, although it uses Mercer data, tends to turn out a bit differently. It has been criticized as favoring Anglophone countries, which—although no help to the United States—means that eight of its top ten cities are in Canada, Australia, and New Zealand. But all are still places that are better for walking than driving.

Whomever you want to believe, the message is clear. Our cities, which are twice as efficient as our suburbs, burn twice the fuel of these European, Canadian, and Aussie/Kiwi places. Yet the quality of life in these foreign cities is deemed higher than ours, by a long shot. This is not to say that quality of life is directly related to sustainability, but merely that many Americans, by striving for a better life, might find themselves moving to places that are more like the winners—or better yet, might try transforming their cities to resemble the winners. This sort of transformation could include many things, but one of them would certainly be walkability.

Vancouver, British Columbia, number one in *The Economist*'s ranking, proves a useful model. By the mid-twentieth century, it was fairly indistinguishable from a typical U.S. city. Then, beginning in the late 1950s, when most American cities were building highways, planners in Vancouver began advocating for high-rise housing downtown. This strategy, which included stringent requirements for green space and transit, really hit its stride in the mid-1990s, and the change has been profound. Since that time, the amount of walking and biking citywide has doubled, from 15 percent to 30 percent of all trips.[24] Vancouver is not ranked number one for livability because it is so sustainable; the things that make it sustainable also make it livable.

Quality of life—which includes both health and wealth—may not be a function of our ecological footprint, but the two are deeply interrelated. To wit, if we pollute so much because we are throwing away time, money, and lives on the highway, then both problems would seem to share a single solution, and that solution is to make our cities more walkable. Doing so is not easy, but it can be done, it has been done, and indeed it is being done in more than a few places at this very moment.