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.

*This program, now in its twenty-sixth year, has served nearly one thousand mayors, with dramatic results. More information can be found at micd.org.

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 push-button 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

*54 out of 100. See below for more on Walk Score.
■See janeswalk.net.

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,

•David Barnett, "A Comeback for Downtown Cleveland." United Airlines just moved thirteen hundred of its employees to downtown Chicago from suburban Elk Grove Township, Illinois (Fran Spielman, "1300 More United Jobs Downtown").

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 auto-centric 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

•DPZ stands for Duany-Plater Zyberk & Company, the firm founded by Andres Duany and Elizabeth Plater-Zyberk, my coauthors on *Suburban Nation*.

"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]

* To be fair, I also caught occasional episodes of *The Honeymooners* and *The Lucille Ball Show*, in which the city took the form of a vague, sooty presence outside the window of a cramped apartment—unthreatening but also uninviting. The only memorable exception was *The Mary Tyler Moore Show*. We'll talk about her later.

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

*Christopher B. Leinberger, *The Option of Urbanism*, 89–90. Leinberger's book is a central source for this section, as it lays out many of the arguments and statistics surrounding the demand for walkable cities. While 4 million Americans lived alone in 1950, that number now tops 31 million (Nathan Heller, "The Disconnect," 110). According to *USA Today*, there are now more households with dogs than children (Haya El Nasser, "In Many Neighborhoods, Kids Are Only a Memory").

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]

•These categories are slightly misleading, since walkable urbanism is still drivable, while drivable sub-urbanism is not walkable. Or, more accurately, in walkable urbanism, driving remains a viable option for those people with disposable income and time to spend in traffic, while in drivable sub-urbanism, walking is a practice undertaken only by the least advantaged people with no choice.

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.▪

•According to Lerner, once a crude version was up and running, "I emailed twenty people about the site, and we had 150,000 unique visitors the next day." Walk Score now serves up more than 4 million scores daily.

▪One of the fascinating things about Walk Score is how accurate it is, despite the fact that it currently measures only one aspect of walkability: proximity to daily destinations. Specifically, the algorithm asks how far one is (as the crow flies) from nine different "amenity categories," including shopping, dining, coffee, parks, and schools. As will be discussed ahead, true walkability depends dramatically upon so many other factors that Walk Score doesn't measure—such as the size of the blocks and the speed of the cars—but its failure (so far) to measure these attributes doesn't hurt it too much due to a convenient coincidence: almost all of the places in America with many different uses

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

in close proximity tend to possess smaller blocks and slower-speed traffic. Mixed uses and pedestrian-friendly streets are both part of one common model (the traditional urban neighborhood), while isolated uses and unwalkable streets constitute the other (sprawl). Where the algorithm begins to fail is in high-intensity, commercial edge cities. Here, a preponderance of retail outlets cranks up the score, despite the fact that the only walking occurs in gigantic parking lots. For this reason, sprawl poster child Tysons Corner, Virginia—straight from the cover of Joel Garreau's book *Edge City*—earns an impressive 87. This puts it two points ahead of my own U Street neighborhood in Washington, D.C., even though half my neighbors don't own cars and walk to everything. Living car-free in Tysons Corner, if not actually illegal, is still a preposterous concept.

Happily, the developers are hard at work refining the algorithm. A new version called Street Smart impressively manages to take block size, street width, and vehicle speed into account. This new version will eventually replace the original one—perhaps by the time you are reading this. But Lerner and his team are wary of moving too quickly: "When we make the change over to Street Smart, a lot of people's scores will change, so we want to have a long beta period to work out any issues."

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

•The outliers were Las Vegas and Bakersfield, California, two cities almost entirely lacking in traditional urbanism (Cortright, "Walking the Walk," 2). In a more recent study of the Washington, D.C., region, Chris Leinberger and Mariela Alfonzo found a positive correlation across all market segments. Referring to Walk Score's five categories, they state that "each step up the walkability ladder adds $9 per square foot to annual office rents, $7 per square foot to retail rents, more than $300 per month to apartment rents, and nearly $82 per square foot to home values" (Christopher B. Leinberger, "Now Coveted: A Walkable, Convenient Place").

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.•

• To be accurate, Portland has not been spared its spare tire of sprawl. But thanks to the urban growth boundary, this area is smaller and more contiguous than it would have been otherwise.

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

•Catherine Lutz and Anne Lutz Fernandez, *Carjacked*, 80. Vehicle miles traveled per household increased 70 percent from 1969 to 2001 (Chuck Kooshian and Steve Winkelman, "Growing Wealthier," 3).

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.▲

•National Building Museum Intelligent Cities Initiative poster. By my estimate, this all occurred on January 20, 2009, when 15,000 Bushies were replaced by 30,000 Obamans. Many Bush staffers, as a point of pride, lived "beyond the beltway" in red-state Virginia.

▪Ibid. In Australia, a similar study determined that living in a transit-oriented neighborhood was likely to save a total of about $750,000 over a lifetime, most of which would be spent locally (Peter Newman, Timothy Beatley, and Heather Boyer, *Resilient Cities*, 120). And since each car removed from the typical household budget allows that family to afford a $135,000 larger mortgage, it's easy to see why Washington real estate prices have dropped only 20 percent from their peak, while housing beyond the beltway has lost half its value.

▲A study of expenditures in Baltimore showed that while each million spent on roads created about seven jobs, each million spent on pedestrian facilities generated eleven jobs, and each million spent on bike lanes created more than fourteen jobs (Heidi Garrett-Peltier, "Estimating the Employment Impacts of Pedestrian, Bicycle, and Road Infrastructure," 1–2).

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,

*According to the census, Portland's bicycling mode share is 5.8 percent, and local studies place it at just under 8 percent. The national average is 0.4 percent.

■"The Young and the Restless," 34. As the number of college graduates in a metropolitan area increases by 10 percent, individuals' earnings increase by 7.7. This applies even to non–college graduates in the city because their productivity rises, too (David Brooks, "The Splendor of Cities").

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

*More than twenty-five years ago, William Whyte's research tracked the stock performance of thirty-eight New York City companies that chose to relocate to the suburbs, and found that they appreciated at less than half the rate of thirty-five similar companies that had stayed put (Whyte, *City: Rediscovering the Center*, 294–95).

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:

*Kooshian and Winkelman, "Growing Wealthier," 2. This correlation seems especially meaningful, since wealthier people have the disposable income that would allow them to drive more.

"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]