

# THE ART of CYCLING

Staying Safe  
on Urban Streets

Robert Hurst Foreword by Marla Streb



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**CYCLING**



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Second Edition

**ROBERT HURST**

Foreword by Marla Streb

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# FOREWORD

It's about time that this book was written.

Robert Hurst succeeds in writing about cycling the way that Rachel Carson triumphed with *Silent Spring*, the seminal work whose publication spawned Earth Day, the Environmental Protection Agency, consumer recycling, and how we look at the world. *The Art of Cycling* is a clarion call not only for cyclists and those with whom we share the road, car drivers, but also for our elected representatives and urban planners who imagine and build the communities where we live.

Hurst is illustrative and inspiring without sounding preachy or depressing, even during the passages where he is righteously angry. His insightful humor ensures that this book is more than just a droll “how-to” guide.

As a professional bike racer myself, as well as a century rider and daily bike commuter, the almost perfect utility of the bicycle is reaffirmed in my mind with each pedal stroke on every ride, whether to the finish line or to the video store. I have bombed down the Kamikaze course at 60 miles per hour. I've won a Winter X Games gold medal skidding on snow. On my downhill bike, I've flown more than 40 feet through the air and landed with a fair share of broken bones. During the last ten years, while on the pro tour, I've ridden through Tokyo at rush hour, across Paris amid a general strike, and around Rome when it seemed that every Fiat's horn was signaling in Morse code.

Yet sometimes it's more dangerous just riding across town to pick up my mail.

In this book, Hurst has expressed all the emotion and logic for cycling as a means of transportation and as a way of life, which I sadly suppress. After a day of defending my right to Mount Tam's fire roads or chasing a morning's skinny tire group ride through Marin County's dairy valleys, or when I am coasting along to the grocery store, too often there occurs a moment. A supersize SUV roars past almost clipping me with a passenger door mirror. I am speechless—too tired to reserve my right to ride a bicycle on a public



street. The tailpipe speeds away, and the moment passes, even more likely to happen again tomorrow.

The sad irony is that Marin County, California, is supposed to be a “bike friendly” community. During this last off-season, I rode my bike from Fort Lauderdale to Baltimore, and I can attest that “sharing the road” is more a concept than a reality.

But it doesn’t have to be this way. Robert shares his strategic and tactical lessons for riding safer and faster through the urban landscape, sometimes even skirting the edges of the law more as a practical measure than as an act of civil disobedience. And I applaud.

Robert Hurst reminds us that if we cyclists don’t skillfully exercise our right to the road, we lose our right to the road. This empowering urban cycling book should come in the glove box of every new car sold.

Marla Streb

Marla Streb is a world-champion mountain bike racer, has starred in the IMAX film *Top Speed*, and is the author of *Downhill: The Life Story of a Gravity Goddess*, published by Penguin Putnam. Before she joined the World Cup mountain biking circuit, she was a research biologist at the Scripps Research Institute, devoted to finding a cure for AIDS. Marla began riding a bike on a daily basis in 1990, when she took an extra job as a bike messenger. Soon, however, it became her life’s passion, and she is now one of the fastest (and bravest!) bicyclists in the world. Check her out at [www.marlastreb.com](http://www.marlastreb.com).

# ACKNOWLEDGMENTS

Although the gaffes and screwups in these pages are solely my responsibility, and I beg your pardon for them, the good stuff comes from many people.

Thanks to Sam Turner for his illustrations.

Heartfelt thank-yous go to the several dozen urban-cycling maniacs that I am blessed with knowing, many of whom are close friends. For years I watched them negotiate the city streets with style, grace, and intelligence. The cumulative riding experience among them is mind-boggling. The advice they give comes from millions of miles and a sprinkling of near-death experiences and does not always correspond to conventional wisdom. Especially among this group I must thank Robert Reid, Christie Martin, Mike McGranahan, Steve Campana, and Joe Dillon; their comments were instrumental in the book's completion.

I received free help smoothing out the manuscript from Kamla Hurst and Steve Campana, and gave my dad, Jerry Hurst, a fat target for his grammatical acuity. (Dad is a retired high school English teacher.)

Finally, thanks to all the cyclists out there who ride every day, snow or shine, in a way that makes it easier for others to do the same.

# INTRODUCTION

While this book is technically a second edition, it is really the third version of a book that was published in 2004 under the title *The Art of Urban Cycling: Lessons from the Street*. This most recent version has been updated throughout and expanded, with some new sections here and there.

It's impressive how things have changed in the bike world since 2006, when the last edition came out. We experienced an economic crisis and an energy crisis, and the "average" American (a mythical character if there ever was one) became much, much more likely to ride a bike for transportation. Urban cycling became a topic, if not a hot topic. Bike-share systems popped up around the country, and city planning departments were reinvigorated in their attempts to attract and accommodate cyclists. All these trends persist as this new edition goes to press. It's exciting for bicyclists and people in general, although arguably a result of troubling circumstances.

One thing has not changed much at all since the first edition: the core message of the book. Those so-called lessons from the street. In fact, most of the key sections on traffic cycling remain completely unchanged. The book describes the mind-set and techniques of the most experienced riders in the world, and those things haven't changed.

Essentially, I realized after the fact, the book describes a system of defensive driving for bicyclists. Preaching the virtues of defensive driving—really a way of thinking about traffic that goes beyond mere rule following and emphasizes anticipating the mistakes of other road users—is hardly new or controversial. Defensive driving has formed the core message of safety programs and educational materials for drivers and motorcyclists since the mid-1960s. In driving and motorcycling instruction, both private and government sponsored, defensive driving still takes top billing.

For some reason we bicyclists were served a very different message. Defensive cycling has not been given proper emphasis by big bike clubs, local police departments, the Feds, or anyone. Rarely has the safety message

for cyclists progressed much beyond “follow traffic laws and wear a helmet.” When cycling advocacy did offer deeper advice it usually deemphasized defensive driving in favor of assertive lane positioning and rule following—as if making oneself as “visible and predictable” as possible were enough to cancel the need for defensiveness. It’s a comforting notion, but obviously, and unfortunately, it’s a false one. It’s something to think about as you read through this book.

I don’t know how much the publication of *The Art of Urban Cycling* had to do with any of this, but the game has definitely changed. Today the bike-safety crowd acknowledges defensive-driving techniques more than ever. There’s still a lot of room for improvement, but we definitely took a few big pedal stomps in the right direction. If we keep rolling that way, we’ll improve the situation even more for people on bikes and, by extension, everybody else.

Thanks to everyone who purchased, borrowed, or stole this book. I hope it helps.

Robert Hurst  
Denver, 2014



CHAPTER 1

# FRANKENSTEIN'S MONSTER





## CONTINUUM

Setting out to write a book about cycling, it didn't seem likely that I would be spending too much time explaining the history of the bicycle itself. Since the book's primary concern would be the cyclist's relation to the twenty-first-century city, it figured that the old-timey stuff would provide, at best, colorful side matter . . . but then an undeniable truth was revealed: The birth of the bicycle, the rise of the auto, and the postmodern American sprawled-out city are all lined up along the same continuum.

As cyclists in the new millennium, our situation has strange and ironic roots in the time of hoop skirts, silver panics, and railroad tycoons. The bicycle craze of the late nineteenth century led seamlessly into the automobile craze of the twentieth and twenty-first. Indeed, as you will later read, a strong argument could be made—a correct one, too—that the success of autos was dependent on the prior development of the bicycle. The automobile craze, having been coaxed into existence in large measure by the fledgling bicycle community, became a chronic condition that shaped America's "built environment" as drastically as its consciousness; it poked around the edges of mainstream culture, changed it, then finally became it. The car culture is a version of Frankenstein's monster that, today, every cyclist must face.

And so, because it will do us no good to avoid the wicked truth, let's begin at the beginning . . .

## BICYCLES IN THE AGE OF MANURE: LEONARDO TO STARLEY

The seemingly straightforward task of explaining the history of the bicycle became rather messy in 1974, when Italian scholar Augusto Marinoni announced that Leonardo da Vinci invented the modern bicycle in the fifteenth century. It was stunning news.

Several years before Marinoni's announcement, monks from the Grottaferra Abbey near Rome were restoring one of the Vatican's obscure Leonardo da Vinci notebooks and unwittingly revealed a blockbuster scribble that had

been, according to Marinoni, locked away for several hundred years. In the restoration process, the monks separated two sheets that had been glued together since the early 1600s and found out the likely reason why those pages had been sealed up in the first place. On the revealed pages were the doodles of one of Leonardo's more restless students: a few obscene cartoons of walking penises—check for yourself if you don't believe—and a nasty, perhaps jealous, caricature of a young man named Salai, who is known to have been Leonardo's prized pupil. But there was also a crude sketch of what is, unmistakably, a bicycle, up in the corner away from the cartoons. And not just any bicycle, but a chain-driven bicycle, using technology associated with the late nineteenth century. Marinoni contended that the sketch of the bicycle was the anonymous student's rendition of a genuine Leonardo design.<sup>1</sup>

Marinoni's claim was met with are-you-kidding-me skepticism from some historians and other academics, for several reasons. To those who were familiar with the bicycle's slow, almost painful emergence during the nineteenth century, the sudden appearance of this chain-driven design from the 1490s simply did not fit into their worldview. Their skepticism was bolstered when Carlo Pedretti, a da Vinci scholar from UCLA, said he had examined the same pages and saw no bicycle at all, only twin circles along with the obscene cartoons, implying that the bicycle had been filled in later using the circles for wheels. The skeptics concluded that the drawing must be a forgery, a hoax—perpetrated by the monks, some unknown smart-ass, or Marinoni himself.<sup>2</sup>

As it stands today, there is no conclusive proof to solve this mystery in favor of either side. Although the skeptics have held sway since Marinoni's death in 1997, it remains deliciously *possible* that Leonardo conceived the bicycle. Examining illustrations from Leonardo's *Codex Madrid*, which he penned at around the same time his student allegedly copied the bicycle design, one can see that Leonardo was heavily engaged with many different kinds of chain and gear combos. On one page of the *Codex Madrid*, there is an intricate drawing of a chain that looks almost exactly like today's bike chains, complete with peanut-shaped links. He even drew designs for coaster brakes. Almost all the elements of the modern bicycle are there in Leonardo's sketches.<sup>3</sup>

Whether Leonardo da Vinci invented the bicycle or not is essentially irrelevant, because, either way, his version of it never caught on. There is no

evidence that such an advanced bicycle was ever built or used before the 1800s. One thing we can say for sure: If Leonardo did create that design, it is one of the more interesting twists of world history that it was lost, sealed up, and hidden away, cheating perhaps a dozen generations out of the genius of the bicycle. For almost four centuries after Leonardo, road travel was restricted to the same ol' tired draft animal routine that had been used since, oh, about 3000 BC.

Whenever people start getting into discussions about inventions and historical events, there is a tendency to boil complex stories down to a manageable list of names and dates, which always turns out to be incomplete. This has been a serious problem with many of the written histories of the bicycle. You should know that there are, without a doubt, many more names involved than those found in any book, including this book, names that are long forgotten or were never known—just a word of warning as we embark on our own name-dropping survey of the bicycle's development in the nineteenth century. Unavoidably there are some names to remember, and some names to forget.

Before the Leonardo controversy, the invention of the bicycle was most often credited, quite erroneously, to a German fellow named Baron Karl von Drais de Saverbrun, or just Drais. This gentleman built a wooden, two-wheeled vehicle in 1816 and patented it as the “draisienne.” There were no cranks or pedals; the rider was meant to straddle the “running machine” and propel himself with the tips of his toes. Aside from certain anatomical issues (ouch!), images from the period tend to indicate that prancing around on a draisienne looked about as ridiculous as one might imagine, with the tights and poofy shirts not helping at all.

This was no bicycle—it was a scooter with a seat. Furthermore, Drais did not even invent the scooter, as variations on scooter-like contraptions go back to ancient times. So we cannot safely bestow upon Drais the credit for giving the world its first taste of two-wheeled wonderment. Drais's chief contribution was to add a steerable front wheel to a preexisting design. While this was indeed a groundbreaking innovation, it is still a long stretch to say he invented the bicycle.

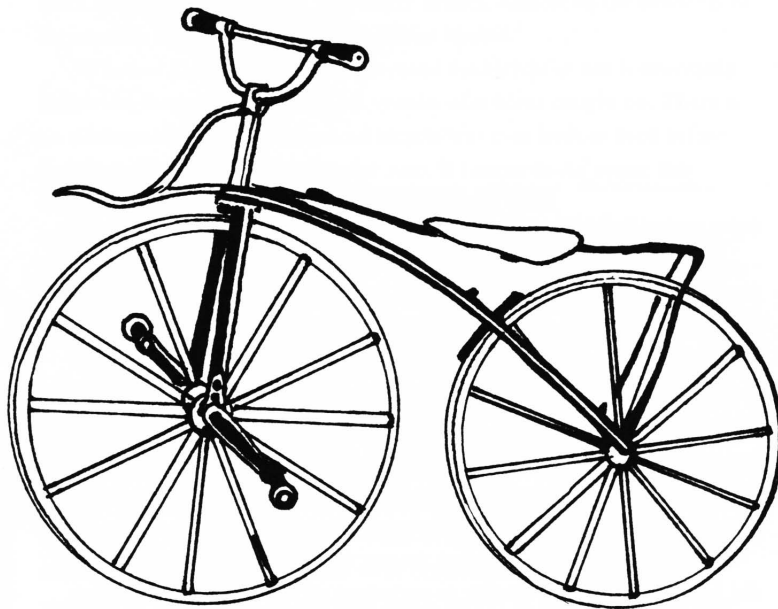
About twenty years beyond the first draisienne, around 1836, a few Scottish fellows got tired of prancing and managed to rig their scooters with

various cranks and levers. The exact nature of their tinkering remains a mystery, but it is believed that their vehicles used a rear-wheel-drive treadle system, sort of like an old sewing machine. These guys (Kirkpatrick MacMillan and Gavin Dalzell) were really on to something.

The attempt at a more elegant self-propulsion was taken up by well-meaning Pierre and Ernest Michaux in the decade following 1855. This Parisian father-son team tweaked and promoted their designs for small, yet heavy, crank-driven vehicles that came to be called “velocipedes” by the hopeful and “boneshakers” by the cynical.

The Michauxs’ inspiration was beautiful, but their execution was a flop—they put the cranks and pedals on the front wheel. Guys! Here the development of the bicycle took an unfortunate turn down a dead-end street. Cyclists would be shackled to this fouled-up design for the next thirty years. Because of the crank placement, their machines were more Bigwheel than bicycle. The velocipedes’ top speed was about ten miles per hour. Variations on the

“BONESHAKER” CIRCA 1855



boneshaker theme nonetheless enjoyed a flash of popularity around Europe, England, and even in the United States.<sup>4</sup>

Putting cranks on the front hub probably seemed like a genius idea at the time, but it had several major flaws: Most important, it meant that the maximum speed was limited by the size of the front wheel. Essentially, the bike's only gear was its front wheel. This is why, in 1869, the boneshaker makers began to enlarge the front wheels of their vehicles, modestly at first. English builders were the first to make the wheels as high as possible—as high as allowed by the leg length of the rider. The rear wheels became ever smaller in a desperate attempt to save weight.

These funky high-wheelers became somewhat popular in America after they were introduced at Philadelphia's Centennial Exhibition in 1876. At first the demand was filled by imports from England. After 1878 they were manufactured stateside by Colonel Albert Pope. Pope priced his "Columbia"-brand machines for around three hundred dollars each—very expensive Bigwheels—and he had no problem selling them. The high cost of the machine meant that a troubling air of class division was destined to follow the two-wheel phenomenon from the beginning.

The high-wheeler was received as more of a novelty than a serious utilitarian device. It was a toy, but it was an inspiring toy. Large numbers of affluent Americans joined cycling clubs; some even had the nerve to race these things in road and track events. They called them "bicycles," even though one could argue they hadn't quite figured out what bicycles were yet.<sup>5</sup>

You start to see why the drawing in Leonardo's notebook caused so much disbelief. The process of eeking out a chain drive seems to have been unduly agonizing through the 1800s.



HIGH-WHEELER CIRCA 1878

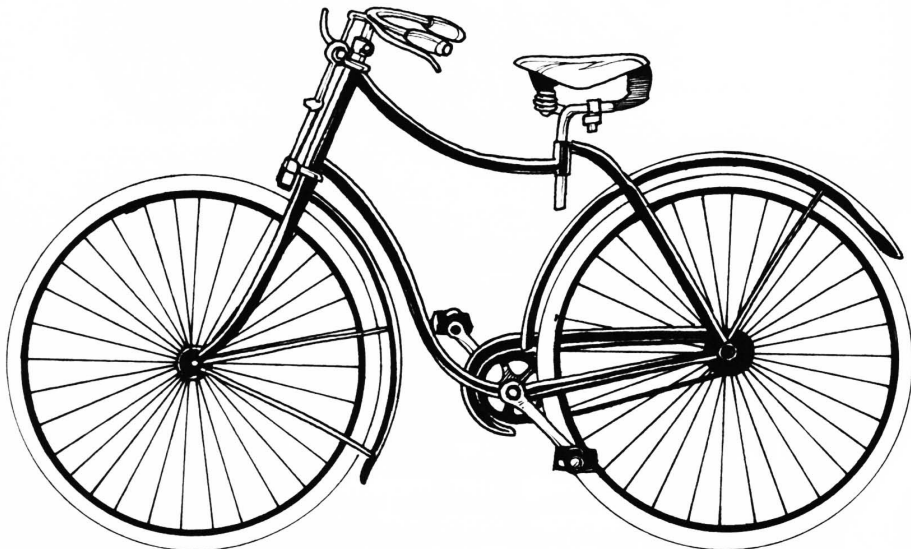
Finally, in 1885, after the front-wheel-drive idea had run its course like a bad flu, J. K. Starley of Coventry, England, invented the “Safety Bicycle.” Starley’s bicycle was intended as a humble alternative to the dangerous high-wheeler, but the outright superiority of his design soon became obvious. Starley had most of the right parts in the right place. The wheels were of near-equal size, and he had the cranks at the bottom bracket with a direct-drive chain to a sprocket on the rear hub. There was a semblance of a diamond frame. Brakes? Who needs ’em. Starley’s bike had a fixed gear, so the ineffectiveness of its primitive friction brake was a nonissue.<sup>6</sup>

Starley’s chain drive was adopted by hundreds of different manufacturers, and after a few modifications the safety bicycle became the standard that survives, in the same basic form, through the present day. Sleek-looking safety bicycles were being mass-produced in America by 1887.

In a world populated by an increasing number of actual bicycles, the high-wheelers became known as “ordinaries” and were suddenly obsolete.

Maybe he was channeling Leonardo. Maybe he was just a pure, plain genius. Either way, we needed him. Forget about Drais. John Kemp Starley is the name to remember.

SAFETY BICYCLE CIRCA 1890





## THE BICYCLE CRAZE OF THE 1890S

One thing Starley didn't have was the pneumatic tire. His early safety bicycles were outfitted with solid rubber tires wired to the rims, just like the high-wheelers. Imagine riding rough dirt roads and cobblestones on solid rubber tires. When an Irish veterinarian named Dunlop developed the world's first practical pneumatic tire in 1889, the modern bicycle achieved the efficient, elegant, and almost-perfect form that is still so familiar to all of us. By 1893 the new tires outfitted every new bicycle sold in America. The pneumatic tire—soon to become a critical ingredient in the emergence of auto and airplane transportation—was the catalyst that launched the bicycle craze of the 1890s.<sup>7</sup>

If you think bicycles are great now, imagine them back then, when the chain drive was brand-new and the very thought of balancing and cruising on two wheels was still a novelty. Riding on air-filled tires must have felt silky smooth after the boneshakers and several thousand years of wagons. Not surprisingly, hordes of people fell in love with the bicycle in the 1890s.

At the height of the craze, it is estimated that there were as many as four million cyclists in the United States alone. In 1896 America, according to James McGurn, “about 250 major cycle factories produced well over a million bicycles.” Augmenting the main factories were about six hundred accessory makers. And, for the time being, there were buyers to absorb all the production.<sup>8</sup>

Because bicycles were still quite expensive items, beyond the reach of most Americans until market saturation caused a price collapse after 1896, the vast majority of early cyclists in America were affluent, and they were city people. This connectedness helped cyclists start molding the environment to their needs. Many of the cyclists massed together into a formidable block of nagging civic agitators. The League of American Wheelmen (LAW), formed by Colonel Pope during the high-wheeler era, swelled in membership and became a feisty bunch after the invention of the safety bicycle. Guided by the savvy industrialist Pope, who understood the connection between the condition of the nation's roads and his huge bicycle business, the LAW's earliest and most important fight was for smooth roads and pavement. The politicians eventually fell over themselves trying to gain favor with the cyclists, and a significant road improvement drive was initiated.<sup>9</sup>

The bike craze also spawned bike paths. Amazing as it may seem, nineteenth-century cyclists were even more excited about creating a separate infrastructure than cyclists today. Separate paths were viewed as escape routes from roads that were ragged, muddy, and populated with angry teamsters.

The 5.5-mile Coney Island bikeway was so well traveled after it opened in 1895 that its surface was in constant need of improvements and repairs. On the other coast, an audacious plan to build an elevated bicycle highway between Pasadena and Los Angeles became a symbol of the bicycle's sudden rise and fall in America. A private company built nine miles of the fully enclosed wooden bikeway, which was as high as fifty feet off the ground in some spots, before a freaked-out railroad won an injunction to stop the bikeway from crossing over its tracks. The project languished in court for years. As the auto fever engulfed Southern California, the bikeway was abandoned and forgotten. All around the country early bike paths suffered similar fates, unfinished and fading back into the landscape.<sup>10</sup>

**It was inevitable that a machine as progressive as the bicycle would crash into some of the socially backward leftovers of American culture. At the time of the safety bicycle's arrival, the traditional role prescribed for women in Western society was oppressive and untenable. When many women started riding bikes in the 1890s, the silliness was revealed in sharp relief. Many conservatives, perhaps more women than men among them, had a visceral, emotional reaction to the very idea of a woman on a bicycle. How unladylike—to actually want to go places and do things, to move and sweat—how dare they!**

**Eventually folks got used to the idea of female cyclists and became obsessed with their apparel. At a time when proper ladies were expected to be in full-length skirts, corsets, and big-ass hats, many female cyclists chose to ride men's bikes in practical outfits that were also much more revealing. Stockings! The bicycling "bloomer girl" became a potent symbol of feminine independence. In 1896 Susan B. Anthony said famously, "Let me tell you what I think of**

bicycling . . . I think it has done more to emancipate women than anything else in the world . . .” Which is pretty sad if you think about it too hard. (See Pryor Dodge, *The Bicycle* [Paris: Flammarion, 1996], pp. 122–30.)

## CHUMPS OF THE ROAD

Bicyclists, I'm sorry to report, have always been the chumps of the road in America. Those of us who would like to blame automobiles and the automobile culture for all of the problems that cyclists have ever faced should take a sober look at the situation in the 1890s, when automobiles were still science fiction and bicyclists swarmed the city streets and country lanes without ever having to worry about getting run over by a motor vehicle. Even then there was an atmosphere of conflict, distrust, and outright malice between those who cycled and those who didn't.

Then as now, much of the poisonous atmosphere was derived from traffic blowups. The general attitude of urban pedestrians concerning cyclists was sour at best—the cyclists came upon them swiftly and silently, scared the hell out of them, and were gone before the pedestrians could deliver a proper scolding. And the attitude of the wagon and coach drivers could best be described as seething hatred. Horses did not react calmly to bicycles. The sudden appearance of cyclists disrupted an already delicate, tenuous balance that existed between pedestrians and horse traffic, and the teamsters' task became much more difficult as a result. The teamsters also found themselves competing with cyclists for the smooth part of the road.

Traffic conflicts were far from the only source of animosity, however. The same affluence and gentility that endowed cyclists with their early civic influence also assured that there would be a healthy dose of urban-rural conflict and an unmistakable whiff of class conflict floating over every ride. In sharp contrast to some other countries around the world, the American rural population failed to embrace the bicycle. To the average rural American, bicycles were silly contraptions, expensive toys for city dandies who, obviously, had way too much time and money to burn. Until about 1896 or so, when the market was flooded and prices plummeted, the high price of bicycles ensured that few in the working

class would be able to experience and enjoy them. The typical bicycle cost about the same as the average factory worker's salary for six months.<sup>11</sup>

And the riders—who were these people? Wannabe cavalrymen, with their bugle signals and “ride captains.” Clearly delusional. Men in girly costumes and women in manly bloomers, scaring the horses and blocking the roads. There was so much to dislike. When the local clubmen came wheeling in quasi-military formation through a country town, the residents came out to watch, and to sneer. If the cyclists left their machines unattended, they would frequently find their tires punctured by snickering kids with needles and tacks. Individual cyclists were occasionally besieged by rock-throwing farm boys.

Anticyclist road rage was common, despite the lack of a cutesy term for it. In rural areas the raging cart drivers were usually armed. Some cyclists in late nineteenth-century America took to carrying collapsible “Bicycle Rifles,” available from the Sears Roebuck Catalog, when they ventured into the farmland surrounding their cities.<sup>12</sup>

Of course the bicyclists themselves are not blameless and never have been. Bicyclists have always been rather poor at making friends on the roadways. Let's face it: Cyclists suck at resolving conflicts. All of the conflicts that cyclists faced in the nineteenth century are still with us today, and there are some new ones as well.

## FROM BICYCLES TO AUTOMOBILES IN SIXTY SECONDS

Rolling onto the horse-dominated scene, the safety bicycle finally heralded the revolution in individualized transport that had been hinted at during the draisienne, velocipede, and high-wheeler spasms. To the chagrin of the teamsters and cart drivers, who were now being passed regularly by long lines of smug cyclists, and perhaps to the relief of the horses, the safety bicycle was an obvious improvement over the horse in terms of efficiency and speed. And unlike the rail-bound traveler, the cyclist could go wherever the roads went—basically everywhere. According to John Rae, the bicycle alone created “an awareness of the flexibility and convenience of travel by road” after a long period of myopic reliance on railroads.<sup>13</sup> Now here was an idea—speed without rails.

After the safety bicycle blew the mind of the world and exploded its expectations for personal mobility and freedom, it turbocharged industrial technology as well, paving the way for the motorized Putsch that would soon follow. Many of the essential elements of early automobiles were developed just a few years earlier in bicycle factories and shops. In addition to Dunlop's pneumatic tire, the bicycle engineers laid at the garage door of the automobile age many crucial advancements, including lighter and stronger metal alloys, durable bearings, a mastery of chains and gears, and the know-how to have it all produced for a commercial market; the most ambitious American bicycle manufacturers pioneered certain factory-testing and mass-production techniques before Henry Ford snagged popular credit for the whole shebang.\*

Of the bicycle's monumental impact, automobile historian James Flink wrote that "no preceding technological innovation—not even the internal-combustion engine—was as important to the development of the automobile as the bicycle."<sup>14</sup> Pause for a second to let that one sink in.

The terms "former bicycle mechanic" and "former bicycle manufacturer" (FBM) reverberate powerfully through the halls of history. We teach our kids about the Wright brothers—former bicycle manufacturers—and the pioneering flight of their mechanical bird. But what about the FBMs who jump-started the auto industry? The list is long, as the progression to motors seemed quite natural, irresistible, to the bike makers:

. . . among others, Opel in Germany; Clément, Darracq, and Peugeot in France; Humber, Morris, and Rover in Great Britain; Pope, Peerless, Rambler, Winton, and Willys in the United States. A substantial proportion of engineering talent as well in the early automobile industry was provided by former bicycle mechanics—including William Morris, who initiated volume production of automobiles in Great Britain; Charles E. and J. Frank Duryea, who built the first successful American gasoline car; and William S. Knudsen, production head first at Ford, then at Chevrolet, and later president of General Motors.<sup>15</sup>

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\*The concept of planned obsolescence is also attributed to bicycle manufacturers. See Smith, *A Social History of the Bicycle*, pp. 18-19.

And don't forget the Dodge brothers, who built and sold bicycles before starting one of the most enduring brands in automotive history. So if you're the type who must always be looking for culprits, look no further than the bicycle lovers, the bicycle riders and racers, the bicycle fixers, and the bicycle makers. They planted the seed, watered the ground, and tended to the seedling that became our unrestrained car culture.

## SPEED AND GREED

Bicycle racing grew quickly to become the world's fastest, most compelling spectator sport in the late nineteenth century. In the United States, crowds in the tens of thousands flocked to the races on tight, steeply banked tracks. The racers were celebrated for their fearlessness as much as their athleticism. At that time, bicycle track racing was one of the wildest, most dangerous activities that could be attempted by a human being. Crashes were numerous and spectacular. ("I say, Mabel, this beats the hell out of lawn tennis!") American racers honed their art in the States, where the competition was most fierce, then went abroad to crush the riders from Europe and Australia. Americans A. A. Zimmerman, Major Taylor, and Iver Lawson were all crowned world champions before 1905.<sup>16</sup>

Even before the turn of the twentieth century, however, many of the most dynamic racers spun off, transferring their tremendous energy to the budding sport of auto racing. Auto racing was the next big thing. It's hard to imagine now, but bike racers around the world became obsessed with race cars—financing, designing, building, driving, and selling. In addition to the riders themselves, many race officials, promoters, and mechanics went over to the dark side, to a new sport they considered to be more thrilling, and more potentially lucrative. Speed and greed, not necessarily in that order.

Many of these budding motorheads hoped to follow in the footsteps of Alexander Winton. Winton was a former bicycle manufacturer from Cleveland who began producing a limited number of autos for a very high-paying clientele; he used the races to advertise his product and found great success. It was recognized that defeating Winton in a high-profile race would instantly make any new builder's reputation. With this goal in mind, Tom Cooper, a



national champion track sprinter who had already made a mountain of cash from bicycle racing, teamed up with a still-struggling Henry Ford to build two overpowered race vehicles in 1902. The Ford-Cooper racers had cylinders as wide as saucers and sounded like a war. Even then they were considered primitive and crude compared to other motorcars.<sup>17</sup> Instead of steering wheels, there were handlebars.

Cooper intended to drive one of the cars himself; as for the other, Cooper recruited a tough bike-racing friend named Barney Oldfield to drive that one, because, it's been said, Ford was too timid, or too smart, to pilot the beast.

**Marshall “Major” Taylor became the sport’s first black champion in 1899—almost fifty years before Jackie Robinson’s entry into pro baseball. Cyclists shouldn’t feel too grand about this, as Taylor was treated poorly overall and was even physically attacked, on occasion, by his opponents. He was banned from several tracks, and some of the top riders, such as Eddie “Cannon” Bald, refused to race with him. In the 1890s many bicycle clubs were explicitly racist organizations, with whites-only membership policies. The huge and powerful League of American Wheelmen, which governed racing and lobbied legislatures on behalf of cyclists, wrote a “whites only” clause into its constitution in 1894. (Robert Hurst, *The Cyclist’s Manifesto* [Helena: FalconGuides, 2009], pp. 30–49. Peter Nye, *Hearts of Lions* [New York: W. W. Norton & Company, 1988], pp. 42–54.)**

## THE ARENA OF DEATH

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*There is an exhilaration in driving fast that I cannot resist; it is like intoxication.*<sup>18</sup>

—BARNEY OLDFIELD

.....

On the afternoon of October 25, 1902, a high-class crowd gathered outside Detroit to watch a bizarre spectacle called an automobile race. The venue was Grosse Pointe Raceway, which was, like most of the early auto-racing tracks, a dirt horse-racing oval. If the Detroit races were like the other auto races of the era, there were probably about one hundred or so of the spectators' private automobiles parked—displayed, really—between the grandstand and the track. Many of the protomobiles would have been very expensive, exotic, and made in France, and there would have been several steamers and electrics among them, as the gasoline engine had not yet emerged as the victor among these competing technologies.<sup>19</sup>

The folks arriving at the track that day weren't ready for it, but they were about to be treated to an event of powerful importance.

Twenty-four-year-old Barney Oldfield found himself in the driver's seat of the Ford-Cooper 999, lined up to race in the five-mile main event against a field that included one of Winton's cars. Oldfield had turned some practice laps in the 999 before, but this was his first race. He was feeling uncharacteristic jitters. He recalled many years later:

I hit the first turn at a rapid clip. The regular procedure on coming to a turn had always been to shut off. I knew that. So I decided not to do it. Instead, I opened my throttle as wide as it would go . . . I slid all the way around the first turn, the 999 trying to jerk away from me and go straight ahead through the outside fence. The rear wheels insisted on getting ahead of the front ones. I used to stop skids on the bicycle by turning the front wheel in the direction of the skid,