THE AUTOMOBILE AGE

The Horse he is a mild beast
And lets you pat his head,
But the Motor is a wild beast
And butts you till you're dead.

—*Anonymous*

When cars began appearing in great numbers on the nation's country roads and city streets during the first decades of the 20th century, many Americans shared the sentiments in this fond ode to the horse. Before long, however, they saw the automobile as the means to a brighter future for all citizens of the Republic.

By 1913, *Scribner's Magazine* was predicting that cars would bring "greater liberty, greater fruitfulness of time and effort, brighter glimpses of the wide and beautiful world," and "more health and happiness.... Thank God we live in the era of the motor car!"

More than any other people, Americans would embrace the automobile. Not just transportation, it became for many a status symbol, an alter ego, a key to personal autonomy. Cars crept into song ("Nothin' outrun my V-8 Ford," Chuck Berry boasted during the 1950s), television ("My Mother the Car"), and literature (*On the Road, The Great Gatsby*). More important, cars and the roads that carried them shaped the face of the nation by allowing a growing urban population to spread out into ever more dispersed suburbs and neighborhoods, to live and work and buy and relax. No other society has reaped so many benefits from the automobile, and none stands to learn so clearly what its eventual costs may be.

The steam engine (1800) was technology's first gift to the American traveler, and railroads opened up the West. In 1869, the tracks of the Central and Union Pacific lines joined at Promontory, Utah, linking the opposite shores of a 3,000-mile continent for the first time. Until then, San Francisco had been a full month away from New York by rail and stagecoach, up to five months away by wagon train from Missouri, and six months away by windjammer around the Horn from East Coast ports. Now the trip took only a few days.

The Iron Horse moved goods and people across a big country. In 1884, with four railroad lines crossing the prairie, more than 800,000 head of cattle left Dodge City and Abilene for the markets of Chicago and the East. San Francisco importers sent Oriental silks to Chicago in two days; bankers in Omaha, Nebraska, dined on Pacific salmon. In 1867, the Pullman Car Company introduced the popular sleeping car, ending many uncomfortable nights for businessmen

"Gridlock" before the auto? Electric trolleys, horse-drawn carriages and wagons, and pedestrians caused this 1909 traffic jam at the corner of Randolph and Dearborn in Chicago. Not a single car is in evidence.

traveling from Boston to Washington or Atlanta to Baltimore.

However, the horse remained the prime mover in short-haul transportation. In 1884, the same year that Dodge City's beef cattle moved east by rail, Americans employed more than 15.4 million draft horses. In cities and towns, horse-drawn wagons or carriages variously hauled freight from rail depots into city business districts, met passengers at the train station, delivered beer barrels to taverns and ice or milk to households, took ladies and gentlemen to the opera, and transported the two tons of coal needed to warm an average Pennsylvania house in winter. Blacksmiths, numbering 220,000 in 1900, according to the U.S. Bureau of the Census, were essential craftsmen in every community.

In the countryside, horsepower (or footpower) provided the chief means of everyday locomotion. In 1890, over half the nation's people (65 percent) still lived in rural areas. The greatest burden of rural life before the car, reminisced popular author Edward R. Eastman in 1927, was "the curse of isolation and loneliness." *The Farm Woman's Problems*, a pamphlet published by the U.S. Department of Agriculture, reported that the average rural family lived three miles from church, five miles from market, six miles from school, and 14 miles from a hospital—long distances by horse and wagon.

In the days before the truck, farmers often flourished or went broke according to their proximity to railroads. Those fortunate enough to live within 10 miles of a rail junction—and thus, a town—could earn hard cash selling their crops or livestock after long wagon trips along dusty or muddy roads, often nearly impassable. Farmers less well situated eked out a bare subsistence or joined their fellow migrants in the growing industrial cities of the North.

Across the nation as a whole, the rural population grew. But while immigrants from Scandinavia, Germany, and other European nations moved into farmlands, particularly in the Midwest, from 1860 to 1900 America's urban population quadrupled. "We cannot all live in cities, yet nearly all seem determined to do so," said New York journalist Horace Greeley during the late 1860s. Families jammed themselves into New York's tinderbox tenements, or Philadelphia's equally grim three-story wooden row houses, smirched with soot.

Rosary Beads

These slums, graphically depicted by journalist Jacob A. Riis, novelist Theodore Dreiser, and other naturalistic writers of the day, became tense ethnic warrens of new immigrants and native-born Americans from the farms, linked only by poverty and a common need to live within walking distance of their jobs at steel mills, slaughterhouses, and textile plants. Factories were also crowded together, bound to the waterways and rail lines at the cities' core.

The electric trolley, introduced in Richmond, Virginia, in 1888, and operating in most major cities by 1900, helped break up some of these urban amalgams. (Boston opened the first subway in America in 1897, but underground systems were not extensive even in New York until the 1920s.) Many blue-collar workers moved into older middle-class neighborhoods encircling the inner city, sorting themselves out by income levels and ethnicity.

However, trolleys did not end the demand for animal transportation. Hay remained a major cash crop for farmers on the outskirts of cities. About 15,000 dead draft horses were removed from New York City's streets every year, killed by heat and sheer exhaustion. Horse-drawn traffic created its own pollution. In 1890, according to historian James J. Flink, horses deposited an estimated 2.5 million pounds of manure and 60,000 gallons of urine on the streets every day in New York City alone. "Street dust" (dried dung) inflamed residents' nasal passages and lungs and turned to a syrupy mess when it rained. The flies that bred on the ever-present manure heaps, as medical authorities warned, carried 30 communicable diseases.

Not surprisingly, many wealthy city dwellers became commuters long before the coming of the car—especially in the heavily industrial Northeast. Only they could afford the time and expense in-

volved in commuting by railroad. Starting in midcentury, like rosary beads on a string, suburbs appeared in discrete formations along the rail corridors. (As early as 1848, Boston was served by 118 commuter trains a day.) Meanwhile, the new trolleys enabled middle-class families to undertake short-distance commuting, at a cost of 10 to 20 cents per day. "Streetcar suburbs" (such as Boston's Roxbury and Dorchester) often gave the growing American metropolis a new star-shaped outline, extending some 10 miles from its center.

The tremendously popular trolleys snarled already chaotic city traffic. Privately owned and operated, they ran along duplicate competing routes, frequently broke down, and were always crowded. During the early 1900s, newspaper editorials described trolley commuters hanging "like smoked hams" from the straps, or "packed like sardines with perspiration for oil."

The automobile was expected to change everything.

"Imagine a healthier race of working men toiling in cheerful and sanitary factories," wrote the New York *Independent* in 1904, who would "in the late afternoon, glide away in their own comfortable vehicles to their little farms or houses in the country or by the sea 20 or 30 miles distant!" Americans equated greater mobility with greater justice and liberty. The car would satisfy two great American hankerings: allowing ordinary folk to dwell in Arcadia while permitting more freedom of movement. Forward motion—personal, economic, social, moral—was what the nation was all about. "Passage, immediate passage!" cried Walt Whitman in 1892. "Have we not stood here like trees in the ground long enough?"

Out of the Mud

Even so, rural Americans despised cars at first. Wealthy big-city "autoneers" explored the countryside in noisy "touring" cars prone to breakdowns and flat tires, laden with *Scientific American*'s recommended equipment (calfskin trousers, mask and goggles, oilskins, medicines, a six-shooter), plus a 32-piece Hammacher Schlemmer tool kit, 30 spare parts, and various indispensable guidebooks. The new vehicles spooked farmers' horses, ran over chickens, and raised clouds of dust that settled on laundry lines. Farmers retaliated: In Gloversville, New York, one tried to horsewhip a passing motorist; Mitchell, South Dakota, banned cars altogether.

City dwellers proved more receptive, although the first cars were rightly described as "toys of the rich." In 1900, only 8,000 cars were registered in the United States. Then came the great equalizer: Henry Ford's sturdy, reliable, affordable Model T. By 1914, six years after its introduction, it cost $440, about half the original price and nearly $500 less than its nearest reliable competitor. The car was now within the means even of Ford's own assembly line workers. By

1927, when prosperity reigned and one Model T rolled off the assembly line every 10 seconds and cost a mere $290, one in every five Americans owned a car.

The masses could at last afford to travel, but there were few good roads. Owing to the growth of railroads after 1830, and, to a lesser extent, of canals such as the Erie (completed in 1825), an early 19th-century boom in turnpike construction had abruptly ended, leaving America with the worst roads of any Western nation.

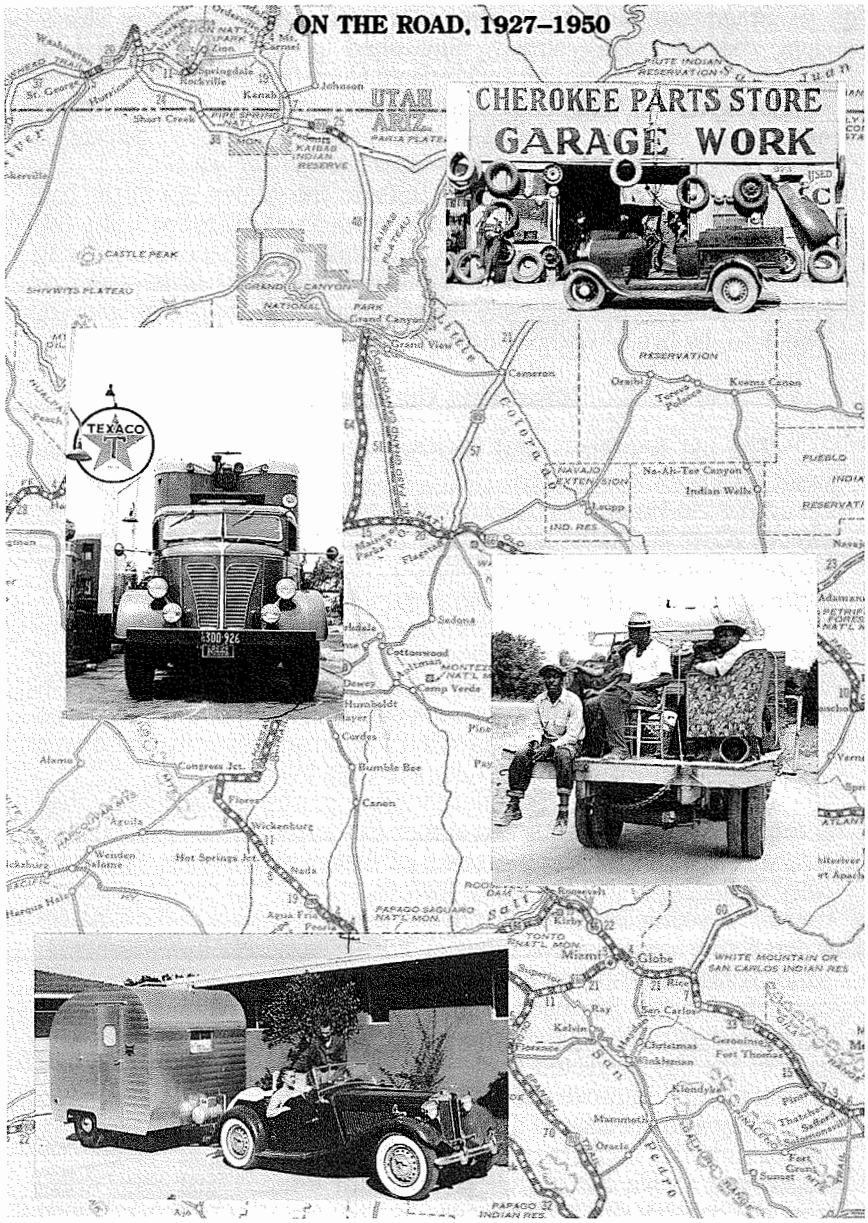
The first census of U.S. roads, carried out by the U.S. Department of Agriculture in 1904, revealed that of 2,151,570 miles of highway, only seven percent were surfaced (with stone, macadam, gravel, sand, brick, even wooden planks); the remaining 93 percent were plain dirt. At around the same time, a "Good Roads" campaign, launched during the 1880s by the League of American Wheelmen (a group of wealthy Newport, Rhode Island, bicycle enthusiasts), began to gather support from the car contingent, especially the fledgling American Automobile Association (AAA). Railroad executives now saw the advantage of building feeder routes from farming areas to their depots. They sponsored "Good Roads" trains staffed with specialists from the Department of Agriculture's Office of Road Inquiry, who spread the gospel ("Lift our people out of the mud") and unwittingly hastened the railroads' decline.

Killing Off the Steamboats

In 1916, President Woodrow Wilson signed a $75 million Federal Aid Road Act to improve rural post roads, the first in a long series of federal subsidies encouraging America's shift to the car. President Warren G. Harding followed with the Federal Highway Act of 1921, a limited program that provided 50-50 matching grants to the states for road construction. Sparsely populated Western states with low tax revenues hit upon the gasoline excise tax as a way to raise highway construction funds. By 1930, all 48 states were collecting gasoline taxes—commonly three or four cents per gallon—to build and maintain what was now a patchy nationwide web of two-lane concrete highways.

All earlier forms of transportation suffered from the new competition, noted historian Samuel Eliot Morison. Livery stables went bankrupt; so did carriage and wagon factories, blacksmiths, harness makers, and every other trade that fed the horse economy. Hayfields reverted to brush and forest. About the only commercial enterprises that still used horses after the early 1920s were funeral parlors; it was considered undignified for the dead to be hustled to the grave in a big, shiny car.*

*Today, at drive-in establishments such as the Frank Givens Funeral Home in Detroit, open past midnight, mourners can drive up to a viewing window and exit into traffic in less than 30 seconds.



Before the interstates: Model A Ford at an Atlanta, Georgia, garage (1936); a truck stops for fuel on U.S. Route 1 near Washington, D.C. (1940); migrant workers near Bridgeton, N.J. (1942); a couple going on vacation in an MG, trailer in tow (1950); Arizona map (1927) shows two-lane highways.

Steamboat, flatboat, and freighter traffic on the Ohio, the Mississippi, and the canals, already diminished by the railroads, died "a lingering death," according to Morison. Once-flourishing river towns, such as Marietta, Ohio, and Salem, Oregon, faded with the decline in waterborne commerce. Trucks could move freight more quickly to more places. The automobile revolution was under way.

Americans now think of the 1950s as the golden era of the car. In reality, most of its powerful socioeconomic effects were being felt well before World War II. Trains and trolleys had encouraged city dwellers to migrate away from the urban core, but settlement was still restricted to the relatively densely populated areas they served. The auto, by breaking those bonds, opened a new suburban frontier.

Improving the Species

The old frontier—rural America—changed radically. Farmers were no longer so isolated. Doctors could make more house calls, children rode buses to consolidated schools, teenagers went to the picture show and farm wives went shopping in town. By 1926, 93 percent of Iowa farmers owned cars, a typical proportion in Corn Belt states, at a time when few possessed electricity or telephones.

Automobiles expanded the rural family's range of social contacts. However, the new relationships may have been weaker than those formed in horse-and-buggy days. As sociologist James M. Williams observed in 1931, "Instead of coming to stay the afternoon, the farmer's family is out for a long ride to some adjacent city and drives into a friend's yard for a few minutes; then away they go."

Not all relationships suffered. One of the automobile's chief accomplishments, as editor and author Frederick Lewis Allen pointed out, was to crack that cornerstone of American morality, "the difficulty of finding a suitable locale for misconduct." In the days before the car, a young farmer's search for female companionship was restricted to a range of five miles or so—a world of church suppers, parlor sofas, hovering parents, pesky siblings. The car extended that range to 10, 20, 50 miles or more, and the less inhibited quickly discovered its utility as the proverbial "bedroom on wheels." Sociologists of the day predicted that increased mobility would lead to less inbreeding and improve the American species.

They also speculated that the automobile, by reducing the isolation of rural life, might stem the trek to the cities and, as the popular slogan ran, "save the farm." Henry Ford insisted that the "drift" from the country would be checked by "the cheap automobile," good roads, and the small-town "moving picture theater."

In *The Devil Wagon in God's Country* (1979), historian Michael L. Berger noted that the automobile did not save the family farm. However, along with its offspring, the truck and the tractor, it

changed the nature of urban migration and may have slowed the exodus to the big cities.* The new automobile economy enabled farm families to make extra money close to home—working in gas stations, roadside stands and restaurants, gift shops, country inns, even renting out their yards to touring "autocampers" for $1 a night.

Cars also acted as a catalyst in the development of small and medium-sized towns (10–25,000), where rural families increasingly moved to take jobs as salespeople (in dime stores, dress shops) or as laborers (stocking feed stores, loading lumber). The population of America's rural villages and towns grew by 3.6 million between 1920 and 1930, while the farm population shrank by 1.2 million.

In the big cities during the 1920s, automobile traffic quickly replaced horse traffic, managing to create just as much congestion. Indeed, the *Literary Digest* fretted in 1924 that citizens were thinking more about a place to park than about the League of Nations. The chairman of Atlanta's City Planning Committee pronounced its traffic "well-nigh unbearable," and the New Orleans commissioner of public safety announced in 1927 that "millions of dollars" in retail trade had been lost because of "inadequate provisions for traffic regulation."

The Flight to Autopia

The cities remained unpleasant for reasons that had little to do with car traffic—overcrowding, lack of open space, slums, crime, filth, noise. Many Americans shared Henry Ford's philosophy. "We shall solve the urban problem," he proclaimed, "by leaving the city."

Across the nation, elected officials and planning specialists abetted the great exodus. Under the direction of urban planner Robert Moses, New York State built the first lavishly landscaped roads for passenger cars only: the Bronx River (1921), the Hutchinson River (1928), the Saw Mill River (1929), and the Cross County (1931) parkways, linking New York City to the new suburbs and parks of Westchester County.

In other cities as well, there were new escape routes: Philadelphia's Ben Franklin Bridge (1926), the San Francisco Bay Bridge (1936) and the Golden Gate Bridge (1937). At the same time, telephones, electric lights, refrigerators, and public water and sewer systems came to suburbia, loosening the city's hold over amenity-seekers. The early Auto Age vision of a little house with a garden could be realized—among all but the working class. The population of elegant Grosse Pointe, Michigan, grew by 725 percent during the 1920s; Beverly Hills expanded by a remarkable 2,485 percent. Many middle-class suburbs, such as Kansas City's Country Club District and Baltimore's Roland Park, sprang up in corn fields and pastures.

*The first crude tractors had been built about 1902. In 1910, tractor production reached 4,000 a year; by 1920, it had passed 200,000 a year.

MIND READING IN THE MOTOR CITY

"We are in the business of giving the public what it wants," declared General Motors executive Harlow Curtice as the 1950s dawned, "and not telling it what it *should* want."

For decades, Detroit has spent a great deal of time and money trying to find out what kinds of cars Americans *do* want. In the early days of the industry, customers had few choices to make. Henry Ford offered them the Model T in any color they liked, he said, "as long as it was black." The rise of "bent metal," multiple hues, tail fins, and other ephemera followed GM's creation of its Art and Color section in 1927 under the famed designer, Harley Earl. Cars, announced his GM colleague, Vincent Kaptur, Jr., should signify "status, power, fun, glamour, and freedom."

Advertising campaigns targeted every possible kind of consumer. There were cars for women, for status-seekers, for the practical-minded. In 1937, Nash introduced what came to be called "the young man's car," equipped with a fold-down bed for roadside trysts.

Even so, the automakers knew precious little about consumers' tastes and preferences apart from what their sales figures told them. In an effort to cover all the bases, they offered a growing array of styles, engines, and accessories. In 1965, a Yale physicist counted all the options available from Chevrolet and concluded that there were more permutations of the Chevrolet than there were atoms in the universe.

One of the first cars to be built with the aid of the new "science" of market research—demographic studies, opinion surveys, "focus" groups—was the Ford Mustang. "The normal procedure in Detroit was to build a car and then try to identify its buyers," wrote Lee Iacocca, who created the Mustang when he was a Ford vice president. "But we were in a position to move in the opposite direction—and tailor a new product for a hungry new market." The Mustang was meticulously designed for the first adults of the baby-boom generation. Iacocca and his aides even learned from market research that 42 percent of college students wanted bucket seats. The car, billed as "a new breed of horse" and introduced in the spring of 1964, was an immediate hit. The company sold 418,812 Mustangs within a year. One young woman, appar-

Over the next decades, the federal government and the states contributed to this "suburban sprawl" in several important ways, notably by financing highways, insuring private home mortgages, and making the interest on mortgages tax-deductible, a particularly powerful subsidy. No other industrialized nation offered its citizens so many inducements to leave the cities.

The Depression slowed the growth of suburbanization. However, it did not shake America's faith in cars. During the grim 1930s, private automobile registration decreased only 10 percent, from 26.5 million to 23.9 million, in a nation of 131 million (by 1940). President Franklin D. Roosevelt's Civil Works Administration put thousands of

ently overwrought, wrote to Ford that "Mustang is as exciting as sex."

Today, the automakers and their consultants have a fairly clear picture of who buys what and why. According to the researchers' findings, some stereotypes about cars and their owners are confirmed while others crumble.

"Yuppies" (young urbān professionals), for example, do favor imported Swedish Saabs. Surveys show that more Saab buyers are college-educated (75 percent) than any other group of car purchasers. Volvos and Volkswagens are also popular among the highly educated. (Black yuppies, or "Buppies," also favor Saabs, along with the Cadillac Allanté and the sleek Ford Taurus.) Cadillac buyers are older (57, on average) and Jaguar devotees earn more ($108,700 annually) than any other brands' buyers. On the other hand, men are making fewer and fewer decisions about what cars to drive home from the showroom. Women chose only about 15 percent of the cars sold during the early 1960s, according to Ford researcher Ray Windecker, but 42 percent in 1985. Their choices are now worth some $46 billion annually to Detroit.

According to the "psychographics" devised by a consulting firm, J. D. Power & Associates, women tend to be "comfort seekers" and "autophobes," preferring luxury vehicles, foreign or domestic, or large, "safe" cars such as the Chevrolet Caprice.

One of the most interesting trends of recent years is the rise in sales of small trucks and vans, up from some 1.7 million in 1980 to 3.6 million units last year. Again, the market researchers have an explanation. Many of the buyers are young "upscale" office workers in search of that *macho* feeling. Ford's Windecker discovered that 70 percent of the purchasers of his company's light trucks used them only for recreation or commuting to work.

The market researchers have also provided Detroit with some good news. Domestic makers, for example, dominate the small truck business. More important, as the "greying of America" proceeds, is that nine out of 10 new car buyers aged 55 or over do not choose Toyotas or Datsuns but stick with GM, Ford, Chrysler, or American Motors. Oversize instrument panels, wide-opening doors, and the reassuring big-car "feel" of the domestic products are among the reasons why.

jobless Americans to work, building, among other things, some 500,000 miles of roads, at a cost of $4 billion. Sociologists Robert and Helen Lynd revisited "Middletown" (Muncie, Indiana) and reported: "If the word auto was writ large across Middletown's life in 1925, this was even more apparent in 1935... Car ownership stands to them for a large share of the 'American Dream'; they cling to it as they cling to their self-respect."

Popular attitudes were summed up in a joke about a man who claimed his family was starving: "If you don't believe it," said the man, "I'll drive you over to our place and you can see for yourself." As Will Rogers remarked, America was the only country that could

go to the poorhouse on wheels.

The much-publicized 1939–40 New York World's Fair raised the nation's hopes that the worst of the Depression was over. And GM's "Futurama" exhibit, by far the fair's most popular attraction, suggested that cars and highways would be the key to that brighter future. A total of five million people rode Futurama's "carry-go-round" chairs along an "automatically illuminated Motorway of 1960." They gaped at futuristic cars speeding into a huge, high-rise city bisected by green spaces, grand boulevards, and raised sidewalks. (It looked a lot like today's Houston.) "As the spectator circles high above the city," said Futurama's announcer, "he is able to compare the congested, badly planned areas of the 1930s with the well-organized districts of the newer city."

Paved with Good Intentions

The announcer did not exaggerate the urban muddle of the moment. In fact, the Depression slowdown caused many officials to underestimate the traffic problems that would emerge after World War II. City planners and politicians had failed to develop adequate public transportation systems during the 1920s, when cities could still afford them, and when demand was still strong. Most trolleys, buses, and subways remained in the hands of private entrepreneurs; during the 1930s, many ran in the red. As they tumbled into bankruptcy, city governments were forced to step in.* Many planners threw up their hands. Chicago's Angus S. Hibbard proposed to bar shipping from the Chicago River and pave it over to make the Loop accessible by car from three sides.

The answer everywhere, as Futurama suggested, seemed to be, More roads! More cars! At a 1940 ceremony to dedicate the nation's first "limited access" freeway, California's public works director proudly explained that freeways would not permit "string towns" or "ribbon cities" to develop as they had along the old-fashioned state highways, with their stoplights, roadside hot dog stands, motels, and gas stations. No one had yet seen exit ramp sprawl.

After World War II, the United States's revived prosperity permitted the full flowering of America's Auto Age. In Western Europe, by contrast, the car culture was still in its infancy. The Europeans, less affluent than the Americans even before the war, owned far fewer autos, and their postwar governments were unwilling to divert scarce funds to superhighways. They stood aside and watched as Americans leaped ahead, all but the poor now able to buy new or secondhand cars.

Auto registrations increased from 28 million in 1946 to 40 mil-

*By 1963, virtually all U.S. urban mass transit was operated at a loss. By 1967, 58 percent of all transit passengers were carried by publicly owned companies; by 1975, the figure was 90 percent.

lion by 1950, when there was one car on the road for every three households. Not surprisingly, the suburbs of New York recorded a 117 percent gain in population during the baby-boom era (1945–64). The population of downtown Detroit fell by nearly 20 percent, while that of its suburbs almost doubled.

Critics often described the renewed suburban migration that began during the 1950s as "white flight" from the Southern blacks who streamed into Northern and Midwestern cities and school systems during and after the war. (In 1910, 73 percent of the black population lived in rural areas; by 1960, 73 percent lived in cities.) But many whites probably left for the same reasons a new black middle class would follow them two decades later: Affluence gave them the means to trade urban crime and congestion for suburban amenities; cars and highways allowed them to commute to work.

The shift to the suburbs was speeded by the crowning achievement of the Auto Age, President Dwight D. Eisenhower's 1956 Interstate Highway Act. The proposed 41,000-mile, $27 billion interstate system would become the world's largest public works program since the pyramids.* It would link all regions of the country, connect 42 state capitals, and occupy two million acres of land. (The Portland Cement Association calculated that the concrete alone would build six sidewalks to the moon.) Eisenhower hoped the new toll-free four- and six-lane superhighways would accomplish several goals: provide vital defense routes in case of war, reverse a post–Korean War economic downturn, and accommodate more passenger cars in peacetime, which to his mind meant "greater convenience . . . greater happiness, and greater standards of living."

First Doubts

In Washington, the measure was pushed by a formidable coalition: highway builders, steelmakers, state and local governments, organized labor, motorists' organizations, farm groups, the auto companies. There was little opposition. To finance the interstates, Congress earmarked taxes on gasoline, auto parts, and tires, as well as fees on trucks and other heavy vehicles, for a special Highway Trust Fund. Eisenhower raised the federal share of road construction costs from 50 to 90 percent. But Congress did not vote a penny in federal funds for interstate repairs until 1976.

The interstates, combined with new state toll roads and metropolitan "beltway" systems (the first was the Boston area's Route 128, completed in 1957), not only enabled drivers to go faster. They also accelerated social and economic change: People moved farther from the central cities; towns and businesses served by the new highways flourished, while those bypassed declined or failed to grow.

*The authorized mileage later increased to 42,500. Construction costs so far have totaled $108 billion.

But even as the first miles of the interstates were being paved, many Americans were having their first serious doubts about the automobile. The initial anxieties were over safety. Ralph Nader targeted Detroit in his 1965 best seller, *Unsafe at Any Speed*. "For over half a century," he declared, "the automobile has brought death, injury, and the most inestimable sorrow and deprivation to millions of people." Noting, for example, that a Cadillac El Dorado at normal cruising speeds took the length of a football field to come to a full stop, he indicted Detroit for building dangerous cars. He also helped make pollution a national issue, publicizing earlier research by California biologist Arlie ("Dr. Smog") Haagen-Smit, which linked air pollution and its ill effects to auto emissions.

Rocky's Magic Show

During the late 1960s, a time of generalized dissatisfaction and cultural upheaval, intellectuals and activists often decried the car as a curse, rather than a blessing—a source of pollution, a symbol of materialistic capitalism, a threat to the environment. For the first time, Washington also acknowledged the car's drawbacks; Congress imposed stiff safety and pollution regulations for cars.*

Highways, too, suddenly began to look more pernicious. When Nader's book appeared, Lady Bird Johnson, wife of the 36th president, was lobbying for the antibillboard Highway Beautification Act of 1965, and local activists in many areas were trying to block proposed urban expressways. The new roads, many of them interstates, were cutting through black neighborhoods in city after city, displacing thousands of residents and destroying established communities. "White roads through black bedrooms," as critics called them, were cited as one factor in the riots that erupted in urban ghettos. Governor George Romney of Michigan, former head of American Motors, blamed downtown freeway construction for contributing to the unrest that provoked Detroit's bloody 1967 riot.

The highway builders soon found themselves in unexpected difficulties. In Ossining, New York, virtually all of the residents threatened with displacement by Governor Nelson Rockefeller's proposed Hudson River Expressway were black. On the first night of public hearings in 1968, the local National Association for the Advancement of Colored People handed out large, circus-like posters: "Welcome to Rocky's Magic Road Show... See Gov. Rockefeller make 1,000 BLACK PEOPLE DISAPPEAR." The expressway plan died.

The last hurrah was Westway, the 4.2 mile interstate that New York City officials proposed in 1970 for Manhattan's West Side. The estimated construction cost: $300 million per mile. Local oppo-

*Emission controls (1970), safety bumpers (early 1970s), and structural requirements for roofs, frames, and other parts (mid-1970s) were imposed. In 1974 came the 55 m.p.h. speed limit.

nents—mostly whites—promptly made Westway a chronic sore point in local politics, meanwhile tying up the project in endless litigation on environmental issues. (In 1985, after its predicted cost had doubled, Westway was finally laid to rest when a federal court ruled that the project would take the lives of too many of the Hudson River's striped bass.)

Facing lawsuits by environmentalists and others, a dozen big cities, including Atlanta, Denver, and Philadelphia, scaled down urban freeway plans during the 1960s and '70s; Boston and San Francisco scrapped them altogether. In 1974, at President Nixon's behest, Congress even tapped the once-sacrosanct Highway Trust Fund to provide subsidies for urban mass transit.

Foes of the automobile voiced a certain I-told-you-so satisfaction during the oil crises of 1973 and 1979. (Others reacted angrily, as when a Cadillac owner crashed a gas line in Hollywood, California, waving a gun while he filled his tank.) It was for many Americans a shock to see how dependent they had become on the automobile. Not only *wouldn't* they give up their cars—they *couldn't*.

Indeed, the popularity of the suburbs, and after them the "exurbs" (the suburban fringe and beyond), continued apace—among both homeowners and businesses. President Jimmy Carter summoned Americans to respond to the energy crisis with "the moral

A uniquely American creation: the drive-in church. In 1972, the faithful gather for a sermon at the Reverend Robert Schuller's "22-acre shopping center for Jesus Christ" in Garden Grove, Calif.

equivalent of war." But commuters and business travelers simply bought more fuel-efficient cars and resigned themselves to paying more than 50 cents a gallon, versus 37 cents in 1970. (By early 1980, the price had reached an unprecedented $1.60 a gallon.) While cities lost 4.6 percent of their populations from 1970 to 1977, the suburbs grew by 12 percent. Lured by cheaper land and lower taxes, more than 170 *Fortune* 500 companies moved their offices or factories out of the troubled cities.*

By the mid-1980s, the suburbs were no longer simply residential "bedroom communities" with backyards and two-car garages. Across the nation, these counties surrounding central cities had been turning into self-sufficient *ad hoc* urban complexes ("minicities" or "urban villages" in sociological jargon), linked by beltways (the new Main Streets), sustained by innumerable clusters of new office buildings and industrial parks (the new workplaces), and by some 20,000 shopping malls (the new downtowns). A resident of the emerging "doughnut metropolis" never needed to set foot in the central city. As the *Atlantic* recently noted, 27 million Americans commuted from one suburb to another in 1980; only half that number traveled from suburbs to downtown business districts. Today, the political pressure in many metropolitan areas is not for new roads into the cities, but for "outer" beltways and cross-suburb expressways to serve local workers, corporate employers, and the trucking industry.

A Nation Driven?

"The automobile," observes historian James A. Dunn, Jr., of Rutgers, "has done just about as much as it could do to shape U.S. urban and suburban environments." With 130 million cars, 40 million trucks and buses, and nearly 3.9 million miles of roads, the United States seems wedded to the car. The tremendous dispersion of a growing population and its changing economy could only have been accomplished with the car—and only by the car can it be sustained.

In Western Europe, governments continue to curb the auto's influence by levying heavy taxes on gasoline and vehicles, skimping (by U.S. standards) on highway construction, and channeling new housing development into densely populated areas served by subways, trains, trams, and buses. There are costs to this strategy, too. For example, European officials are reluctant to reveal the total subsidies for their nationalized railroads, but, according to a 1979 estimate by the U.S. Department of Transportation, as much as 60 percent of their operating costs (as in Great Britain) are subsidized.

*Another development, as a 1978 Congressional Research Service report noted, was a "buckshot" migration pattern to rural areas entirely dependent on automobiles and highways, especially in the West and Southwest. The nation's rural population increased by 21 percent during the 1970s. Towns of 10–25,000 inhabitants grew 10 percent, due partly to an influx of retirees.

Amtrak, a perennial target of federal budget cutters, receives some $600 million annually from Washington, roughly 40 percent of the passenger railroad's budget.

But many of the costs of America's dependence on the car are often shrugged off: traffic jams, accidents, air pollution, long-distance commuting, the "Los Angeles-ization" of suburbia. Competition from shopping malls has sapped the vitality of Main Streets everywhere. Ridership on public transportation—buses, subways, trains—continues to decline. Seven states (New Hampshire, Maine, Wyoming, Oklahoma, South Dakota, Hawaii, and Alaska) are virtually without passenger train service; business travelers must rely on airlines and rented cars; thousands of individual communities are linked to the rest of the nation only by television, telephone, and ribbons of asphalt and concrete. The annual cost of extending and maintaining the nation's aging roads and highways reached some $46.5 billion in 1986, up $14.7 billion since 1980. And every new highway eventually seems to generate new traffic congestion.

The ultimate "hidden cost" may be America's continuing dependence on massive imports of petroleum, and its underlying vulnerability to the whims of foreign oil ministers. Barring a breakthrough in the technology of the internal-combustion engine, the car culture promises to cost a great deal more at some time in the future. Yet Americans are unlikely to shrink at the price. Practical necessity aside, as Frederick Lewis Allen wrote in 1952, any American "who has been humbled by poverty, or by his insignificance in the business order, or by his racial status, or by any other circumstance that might demean him in his own eyes, gains a sense of authority when he slides behind the wheel of an automobile and it leaps forward at his bidding, ready to take him wherever he may personally please."

The car is no longer so uncomplicated a symbol of freedom. Yet the symbol has not lost its appeal. A nostalgic mood is much in evidence, as *Life*'s March 1986 pictorial essay, "Car Love: Fifty Years of Cars," or novels like *The Last Convertible* (1978), attest. These backward glances also tell us something about the future: Although cars still represent freedoms beloved by Americans, they no longer promise to create *new* ways of working or living. Once the dream of a better future, the automobile has in some ways become a throwback to our imaginary past. But it is very much with us.