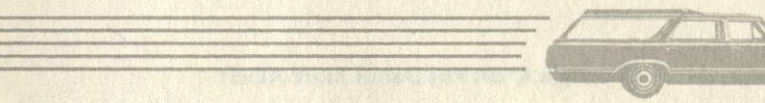
ARE WE THERE YET?



The American Automobile Past, Present, and Driverless

Dan Albert

W. W. NORTON & COMPANY
Independent Publishers Since 1923
NEW YORK LONDON

Introduction

A NATION OF DRIVERS

The author's 1985 Saab 900S, somewhere on a journey across America.

WE HAD SOME FRIENDS ON THE CAPE. THEY WERE ALWAYS so generous with us. They'd invite us for dinners of steaks and wild mushrooms that they had foraged themselves. There was vodka. But when we would try to reciprocate they always demurred. So if Sasha Gessen's son needed a car, I would give him a car. It wasn't pure generosity on my part though. My mother had been nudging me, and then nagging me, to get a new car. We were about to bring home a new baby. "Daniel," she would say, "the Saab is fifteen years old. You need something safer. Don't you want something newer?" I put my foot down. Then she went to work on my wife. I lost, two against one.

Admittedly, plastic bits were falling off, and the body was still a little bent where it had been rear-ended. Yes, it wouldn't stay in third gear without a bungee cord, but the Saab had never let us down. My future wife and I had taken it on a six-week grand tour of America, down winding hollows in West Virginia and across the South Dakota prairie. At Great Sand Dunes National Park in Colorado, a kangaroo rat had bedded down on the warm engine overnight and the violent blowout of its little body popped a belt off when I turned the key. The ranger lent me a wrench and I put it back on. Guts and hair coated the engine compartment, but the musky smell through the air vents dissipated in a few days. It was gone by the time we reached the California coast, where we parked next to a campsite by the beach and watched whales swim along the shore in the late-afternoon sun.

When we returned to Michigan, I followed the maintenance schedule in the *Saab 900 8 Valve Official Service Manual*, refreshing belts, flushing coolant, and an oil change every 3,000 miles. I fixed minor problems (some of which I may have caused). I did the brakes and changed the clutch. Saab made planes for the Swedish Air Force and only turned to building cars after World War II when the warplane business went soft. As airplane designers, they were free from automotive conventions. They put the engine in backwards to make it easier to change the clutch and they put the ignition switch on the floor between the bucket seats, I assume because that's where you insert the key to start the engine on a Swedish warplane. So, it was a quirky car, a fun car, even a rare car out in flyover country. After West Virginia, we crossed several states before seeing another one. But, that was many years before the plastic bits and the bungee cord. Anyway, who wants to wrestle a car seat into a two-door hatchback.

So, my Saab became Keith's Saab and he dropped $500 on it to ensure that it could make the run between New York and the Cape for steaks and mushrooms. Anyone who has made that trip regularly—indeed any trip along the Boston-Washington corridor—knows highway dysfunction at its worst. Traffic swarms the cities like a chaos of angry bees and you quickly become one of the angri-

est. The trip from here to there can take an easy four hours, or miserable seven, but it's hard to know which when you depart. "Traffic is unbearable," people say, but of course it isn't. Millions choose to bear it every day. My (our) 1985 Saab definitely didn't like stop-and-go traffic, in which it tended to run hot. It preferred the open road, where the aerodynamic body made it possible for a mere 115 horses to cruise at seventy-five miles an hour with ease.

Keith continued to care for the Saab. When it developed leaks, he fed it fluids. He dutifully swapped it from one side of the street to the other in observance of alternate side parking. New Yorkers get by without a car, and the city doesn't make car ownership easy, or cheap, but a car can definitely come in handy. Keith moved house twice and reports that each time he found that he had exactly two Saab's worth of stuff. They seemed a good fit, Keith and the quirky Saab. Then Sasha's son killed my (our) car. It ran well enough, he tells me, until the night of the *n+1* Issue 2 party. This would have been February 2005. I'll let him tell the rest, because I can't bear to:

> Chad and I were in charge of liquor procurement, and we drove the Saab to this place in Sunset Park, under the BQE, where you could get beer pretty cheap, and we managed to fit 36 cases of beer in the car! We actually had an argument over whether it'd be possible—I didn't think they would fit, Chad thought they would, and Chad was right. What we didn't realize was that this was too much weight for the Saab. The wheels were audibly rubbing against the wheel wells, and maybe something else was going on. Anyway, we made it back to our place and parked, but after that the Saab wouldn't move. The engine started, but the car wouldn't move. And there wasn't much time left until the party! Luckily our managing editor's boyfriend was in a band and they had a van and we borrowed that.

From there the story devolves into tow trucks, lost paperwork, and a bicycle. I know he was sad, so I don't blame him. "If you have tears,

prepare to shed them now," he had said, before bending to the tale of the Saab's final days. And it's only a machine, after all.

I'm assuming it was in thanks for letting him share the Saab's final years, or a foreshadowing of guilt, that he asked me to write for his new magazine's website. I sent him a piece about how Governor Arnold Schwarzenegger wanted to terminate my 1976 Buick Estate wagon. Keith made the piece much better, put it up on the website, and here we are.

* * * *

THIS IS A BOOK about our relationships to cars and through cars and the stories we tell about those relationships, both as individuals and as a nation. How we understand the history of the American automobile and make sense of our automobile-dependent present will determine the driverless future.

My Saab story is uniquely my own, but hardly unique. Whether Americans ride in a car daily or almost never, they inhabit a nation, the landscape, society, culture, and economy of which were remade during the twentieth century around the privately owned automobile. That uniquely American experience of teaching our children to drive bonds us together. It is a fraught moment, a time of uncommon closeness between parents and their adolescents yearning to be free. They suddenly need their parents in a way they haven't since puberty. For parents, it is bittersweet. We see our roles reversed and our babies moving freely in the world for the first time. Their operator's license will identify them as first-class citizens, with all the privileges of a driver. Second-class citizens, those too poor, too old, or too infirmed to have a car, still must inhabit the landscape the automobile has wrought and remain dependent. Deadening sprawl has made walking, cycling, and even motorized mass transport logistically impossible. Like it or not, automobility is our national way of life.

I don't pretend that every American experiences automobility the same way. "Driving while black" is not the same as driving while white. A person driving a new luxury coupe with a 50,000-mile war-

ranty and free routine maintenance experiences a different automobility than someone living life on the economic margins and driving a twenty-year-old sedan with a leaky radiator. And it goes almost without saying that the car culture is deeply gendered. Men are heavily overrepresented in every aspect of the automobile economy. Car guys fetishize sports cars and regale each other with tales of double-clutching; they are the hobbyists who customize their cars or restore them, and shade-tree mechanics who change their oil and their brake pads. But I have learned that there are millions of incognito car guys—both men and women—driving among us. While she was tapping my vein for an IV, a middle-aged nurse in scrubs outed herself as a car guy: she averred that she'd never surrender her BMW convertible with its stick shift for a driverless car. My oldest daughter can't change a tire or check the oil. Evidently she doesn't even know how to put gas in the van. But often, when I ask her where she was last night, she replies, "Driving. It's relaxing." She shuns my footsteps rather than following in them, but she's a car guy as well. A best-selling, eco-conscious, lefty novelist I know asked me for car buying advice. He cares deeply about climate change and so had settled on a choice between two high-mileage options for his first brand-new car: a diesel VW Golf and a Toyota Prius hybrid.* He had run through careful greenhouse gas calculations based on how he planned to use the car. By assuming more highway driving than city, long trips, not short, he was able to make the carbon footprint for the two cars come out even. Those calculations were a tell. He was never going to buy a Prius, a soporific rolling appliance. Eco-conscious, yes, but also a devotee of what Volkswagen called *Fahrvergnügen,* "driving pleasure." He wanted dispensation more than advice. I told him to let his car-guy soul buy the Golf and he did.

Of course, there are car guys the world over. The United States accounted for 63 percent of the world's vehicles in 1960, 23 percent in 2000, and less than 14 percent in 2014. "More than one billion

* This was many years before Volkswagen's diesel cheating crimes.

vehicles populate the earth today," calculates Daniel Sperling, professor of engineering and environmental science and policy at the University of California, Davis. "The globe is accelerating toward a second billion, with South and East Asia leading the way and Russia, Eastern Europe, and South America following along." Not only do consumers embrace the luxury, flexibility, and status of automobile ownership, national leaders pursue automobile manufacturing as a path to prosperity and industrial prowess. They know it worked out well for the United States. The Chinese now produce 30 million cars a year and the rate of car ownership there increased fivefold between 2004 and 2014. President Xi Jinping has made automobile production central to his "Made in China 2025" industrial policy.

Yet America, where the ratio of cars to people reached 816 per 1000 in 2014, has always been an outlier. There are 239 million cars and light trucks registered in the United States, more cars than drivers to drive them. The US was by more than a generation the first mass-motorized society in the world. The reasons for that big head start are several. The modern automobile was invented in Europe, where it was considered a rich man's toy. In America, however, a culture of consumption and a free and open society with relative income equality generated a fertile mass market. Henry Ford pursued that mass market with missionary zeal for low, low prices. He developed a system of mass production based on interchangeable parts, the moving assembly line, and total control of labor to serve that line. Ford alone produced nine million cars in the five years between 1921 and 1925, and as what Marx's disciple Antonio Gramsci would label "Fordism" spread, the rest of the industry doubled that number. High productivity let workers enjoy material abundance—a middle-class lifestyle—and unprecedented mobility. Auto production consumed North America's abundant natural resources, converting iron, coal, and forests into motorcars and domestic oil into gasoline. The car also demanded space, another natural resource this continental nation has in abundance. The automobile converted virgin land to productive use: bigger homes, consolidated schools,

office parks, and shopping malls. Add to this economic activity new business opportunities from gas stations and motels to drive-in movies and auto repair shops. The total value realized by motorizing America in the 1920s, economists say, is unknowable.

Once created, automobility had to be expanded, adapted, and defended for it to survive. When expansion slowed in the middle 1920s, automakers invented the car loan and easy credit to re-inflate the market. When traffic violations and adjudicating car crashes clogged the courts in the 1930s, a new form of automotive jurisprudence was invented. To combat congestion, we built more roads. To combat urban smog, we added catalytic converters. When the cost in human lives became too dear, we added seat belts, airbags, and crumple zones to make car crashes more survivable. In the face of climate change, we're not abandoning our cars; we're electrifying them. Likewise, the driverless car will revolutionize automobility to allow it to thrive for another century.

A deep understanding of American automotive history and the American car culture is critical to cutting through the self-serving explanations for the driverless car and getting to the truth. One line of thought holds that technological advances will finally fulfill the long-held dream of a driverless car orders of magnitude safer than driven cars. In fact, the technology to create driverless cars has existed for more than half a century. In the 1950s RCA and GM ran driverless cars on test tracks. In the 1990s, federally supported research demonstrated "hands off, feet off" driving could be relatively easily achieved. Realizing the safety benefits of automation, it turns out, doesn't take much computing power at all. In any case, high technology is not the only answer to achieving most of these noble ends. For example, speed governors, parking fees, and higher gas taxes have all been available to make driving safer, rescue the city, and protect the environment over the years. The various problems supposedly endemic to the current model of automobility do not arise naturally from the technology of the driven car. That they have not been solved before speaks not to inadequate technology but

to choices made about the relative value of, for example, speed, economic efficiency, and human life.

Another line of thought holds that Americans hate driving, that we're really bad at it, and that owning a car is too expensive. Millennials love their phones more than their cars. So, young people are getting licenses later in life, or not at all, gravitating to walkable neighborhoods, and opting for new and environmentally friendly mobility solutions like app-hailed rides, shared electric scooters, and bicycles. Yet, the ubiquity of chauffeur-driven cars available by ride-hailing app allows them to enjoy an automobile lifestyle once available only to the wealthy.

These evolving consumer choices and generational shifts have developed within a structural transformation of American capitalism. The driven car has gone from being the very engine and facilitator of economic activity to a knot in the system, something to be cut out. When they arrived on the scene 120 years ago, the automobile and motor truck smoothed the flow of commerce and capital and wove the country together into a single market. A major theme of the current mobile revolution—by that I mean the iPhone and the cloud, not the driverless car—has been replacing physical travel with virtual transport. Kids can attend class without going to school, shoppers can buy anything they desire without leaving the house, and many people can "work" from anywhere. The automobile and road once reduced friction in the flow of commerce. They made it easier to get out and make things and buy things—indeed, the automobile itself was the consumer product most desired and the one whose production reaped the most profits. Now, automobile production has become, in the aggregate, unprofitable. The FANGs—Facebook, Amazon, Netflix, Google—are Wall Street's money machines. They have made commerce nearly frictionless, thereby beating the automobile at its own game. With the driverless car, moving through space becomes as frictionless, effortless, and unreal as moving through the cloud. The robot car is the ultimate mobile device.

Kids today may eschew driving, but even many people already behind the wheel seem to have quit driving.

Small steps that made driving ever easier—from electric starters to automatic transmissions and computerized engine management to antilock brakes—were nothing compared to the giant leap of satellite navigation, GPS, made in 1996. Being directed by a humanoid voice from a mobile phone may seem a natural evolution of the paper map. But a map was something you pored over and studied, something you *consulted*. GPS must be *obeyed*. Furthermore, GPS navigation keeps us fixed in time and space. In other words, it used to be that when we drove we had a general sense of where we were and when we would get there. On the road, however, we were neither precisely here nor exactly there. We were in motion. Similarly, although we could glean from the map a rough idea of how long a trip should take, the precision of the paper map became a nebulous time bubble on the road, a dynamic approximation rather than a precise moment.

When I was a kid sitting in the wayback of our Olds Custom Cruiser and posed that profound philosophical question, "Are we there yet?" my dad answered with something vague. I knew it was a long trip, but never had myself fixed in time. I stared out the window, listened to the rhythm of the tires over the expansion joints, and watched the cars go by. I wasn't here, or there, but in between, en route. My kids ask and I give them our arrival time down to the GPS minute. The road was once an open-ended adventure, full of wrong turns and serendipitous discoveries. Now the phone knows every mile and every minute before we leave the garage.

Finally, GPS is just one aspect of the persistent connectivity provided by mobile phones. Now work, family obligations, rich media and social marketing follow us into the car. Once we were incommunicado, inhabiting an interstitial space that was neither work nor home. We were neither workers nor consumers but drivers. It is said that this persistent, cloud-enabled connectivity distracts the driver and causes crashes. For many "drivers," driving has become the dis-

traction. Driving is now so easy, so passive, that many people gave it up long ago. Yet there they sit, behind the wheel. These zombie drivers feed on Facebook updates, insistent texts, and any number of other interruptions.

Yet, the driverless car enters the obdurate auto-centric landscape built up over a century. No matter how many presidents and senators intone, "My infrastructure bill . . . ," we have neither the will nor the capacity to tear it all up and start again. Nevertheless, the end of driving in America will have profound consequences for how we organize our lives.

But enough of this heaviness. We're hitting the road circa 1893, having jacked a car from France and customized it for the freedom-loving, democratic U.S. of A. The American automobile of 1910 is cheap and cheerful, ready to take us off-road through the heartland (where even the roads are off-road). When we tire of our rattletrap Model T, we'll trade it in for a 1925 Chevrolet, no money down, in any color we like. With the roads now paved and the American automobile transformed from an open carriage to a glass-enclosed, all-weather machine, we'll start seeing cars everywhere. I don't pretend the road will always be easy. When the Depression hits, we'll barely be able to afford gas. Detroit won't even build cars during World War II and we'll be ordered not to drive for the duration. Automobile plants will win the war for the Allies, though. Afterwards, our years of automotive deprivation will be rewarded with a powerful and beautiful new breed of American automobiles. During the golden decade of the 1950s, we'll ride superhighways into space. As we enter the 1960s, the road gets bumpy with critics popping out from behind every bit of shrubbery. The car blows smog out the tailpipe and there seem to be a lot of wrecks and dead bodies on the road, they will say. From then on, Detroit will suffer a protracted decline, ending in bankruptcy. Automobility will survive, however, and by the twenty-first century we'll be driving bigger, more powerful cars farther and faster than ever. Then things get murky and I lose sight of the road ahead. Somewhere along the way, the car

became unfixable and the kids quit wanting to drive it. Soon, it will motor along on its own.

We'll go from muddy roads to superhighways, from horseless buggies to driverless EVs. Like any road trip, it is going to be fun. We'll discuss car books, car movies, how cars are made and how they work. We'll cast a critical eye on all the cars we come across on the road. Since it's a long trip, I'll probably get to talking about myself, what it was like to ride in the wayback, about my adventures in car repair, and the exquisite joy of teaching my daughter to drive. I will even tell a joke or two, probably three, some even worse than the others. I've been traveling this road for more than thirty years. So, buckle up and relax. I'll drive.