

MUSINGS ON MOBILITY

Essays by Michael L. Sena

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MUSINGS ON MOBILITY essays touch on everything associated with why and how people move, the ways they get from where they are to where they want or need to be, and the infrastructure that sometimes enables and sometimes obstructs their movement. The author of these essays was trained and worked as an architect and urban planner, and then changed careers to work with the automotive manufacturing industry and its systems and service suppliers on designing, developing, and putting into use products and services that make driving safer, more secure, and more comfortable.

The Ability to Move: A Question of Life and Death

"The people in flight from the terror behind--strange things happen to them, some bitterly cruel and some so beautiful that the faith is refired forever."

John Steinbeck, The Grapes of Wrath

THE ABILITY TO MOVE has always been a question of life and death. Humans did not leave Africa 125,000 years ago as tourists. They didn't trek across Asia and cross into North America 15,000 years ago and continue down to the southern tip of South America to send postcards back home to friends and family. They were looking for something: SURVIVAL. Food, water, and peace. In the process, they changed their skin, eye and hair color, learned to form words and write down what they were thinking. "If it doesn't work out here, we'll have to move on—if we can." If we can. And they invented ways to move on and carry the things they needed to start over when they got to where they thought it was better than from where they had come.

"Where are we going, Pa?"

"Over that mountain for starters, son."

"What's on the other side of the mountain?"

"We'll find out when we get there."

Had someone boldly gone there before them? Were those who were already there the "indigenous people" who had the rights that came with being there first? Would they share with us? Would we have to keep moving on to another place where there were no first settlers? Could we fight them and take what they had and force them to leave? Then we would be the indigenous people when strangers came. These were the existential questions that all of our forefathers asked. All of them, with no exceptions. Yours, too. Because we are here, they answered those questions correctly. Think about that. Their canoe made out of a log did not sink when they were crossing the river to escape from whatever was chasing them. The clothes they made kept them warm enough so they did not freeze to death when they crossed over those mountains. The bows and arrows and spears and knives they made helped to give them food and fight off their enemies and stay alive. We are proof they succeeded.

Why only the pioneers circled their wagons

You would not be faulted for thinking that the automobile was invented in Chile. After all, the Mapuche and Veliche people, in their search for survival, had travelled farther than any other humans had ever travelled before, and they should have had major incentives for having a much better way to leave the inhospitable environment where they ended up. However, when the Spaniards finally got down to them in 1567, they had not encountered a single

“The simplest and most effective way for the Indians of the Southwest to learn how to break, train, and care for horses was for them to work for the Spaniards. Such an opportunity was toned on the Pueblo Indians of New Mexico in the seventeenth century.

*American Heritage
How The Indian Got The
Horse*

automobile, either there or along the way. Neither had they seen a single wagon. In fact, there wasn't a wagon to be found on the two North American continents that the Spaniards, British, French, Dutch, Swedes, Germans, and every one of the other non-indigenous people had not brought with them. From what would eventually be called Cape Horn on the southern tip of South America to Point Barrow, the name given to the farthest point of land in the north on continental North America, there was not one indigenous people's wagon. Why was that? Had not our cousins discovered the wonders of the wheel? They did, but not for hauling themselves or their stuff around. They made toy wagons for their children. What kept them from making wagons for themselves was the absence of motive power. There were no animals that could pull them. No horses or oxen. None. Llamas were useless. Bison? *No tan bueno.*

Horses evolved around four million years ago in Europe, Eurasia, North America, and Beringia (the land area that connected Asia to North America up to 10,000 years ago). Horses went extinct in North America between 10,000 and 7,600 years ago, either because of the arrival of humans or because their food chain had been disrupted. There had been camels as well in the Americas, but they went extinct at the same time as horses.¹ Cattle evolved from the aurochs in Eurasia and North Africa and were first domesticated around 10,000 years ago in the Fertile Crescent area of the Middle East. Like horses, they were brought by the interlopers from across the ocean. Imagine what it felt like to the Aztecs when Hernán Cortés and his Spanish conquistadors came at them in full battle gear, riding horses and shooting their muskets. (There were no guns in the Americas either before the invaders arrived.) I can imagine: I'm pavement, and a steamroller is coming.

Native Americans finally did get to ride horses. There are plenty of tales about how horses found their way from the Spanish conquerors to the Native Americans, but it is most likely that it was the Spanish who taught the Indians how to break, train, and care for horses, but not ride them.

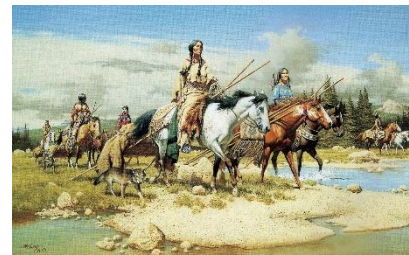
In 1595 Philip II of Spain commissioned Juan de Oñate, a wealthy citizen of Zacatecas, to conquer and settle the upper valley of the Rio Grande del Norte, where the Pueblo Indians lived in their farming villages. Early in the spring of 1598 Oñate led forth his caravan of soldiers and settlers, with their families and slaves. Franciscan friars accompanied the caravan to care for the spiritual needs of the settlers and to convert the heathen. They travelled north across Chihuahua and through the great gap in the mountains, El Paso del Norte. There they crossed the Rio Grande and finally they reached the upper valley with its Indian settlements and took possession of all the land, forcing the Pueblos to work as serfs in the fields they had once owned. The Spanish brought herds of sheep, cattle, and horses to pasture on the desert ranges. Herdsmen were needed day and night to keep the flocks and herds from straying, to protect the animals

¹ <https://www.americanheritage.com/how-indian-got-horse>

from predators, and to keep them out of the growing crops. Indian herdsmen proved adept at managing the sheep and goats, moving them to fresh pastures and holding them away from the fields. This they could do on foot; but the half-wild range cattle could be handled only by skilled vaqueros mounted on fleet, well-trained horses. Spain, in her colonial regulations, had decreed that no Indian should be permitted to own or ride a horse. Thus, all the arduous work of handling the range cattle and range horses devolved on the Spanish men, vaqueros.

It was only a matter of time before these restrictions on who got to ride were relaxed, and one stable boy after another did mount a horse, grabbed the reins of a couple of other horses, and took his chance to ride away to a tribe that was still free of Spanish domination. After that, the the Pueblo Indians found ways to obtain more horses through trade. At the end of the 17th century, after the Pueblos revolted against the Spanish and forced them to retreat to El Paso, the Pueblos found themselves as the proud owners of large herds of horses, cattle, and sheep which they sold and bartered away. From the Pueblos, horses went to the Plains tribes, the Navahos and Utes, and eventually to most of the tribes on the North American continent. But there are still no wagons.

Once the Native Americans had horses, they developed a simple animal-drawn vehicle made of two crossed trailing poles for carrying loads when they moved camp or took goods to markets. The non-indigenous people called it a *travois*, a word borrowed from the American French *travail* (work). Surely, each tribe had their own word for the contraption. By the time the paintings made by artists like Charles Marion Russell, Frederic Remington, and George Catlin depicted the Cree, Crow, Cherokee, Sioux and other tribes at the beginning of the 19th century, they were accomplished horsemen, slaying buffalo, attacking the pioneers in their 'prairie schooner' wagons² or dragging travois(es) behind their horses.



Painting by Frederic Remington
The Buffalo Hunt (1890)

In my search for wheeled vehicles driven by Native Americans I found paintings made in the 20th century of what became known as the "Trail of Tears". This was the forced relocation of Indians in the Southeast United States to what became known as Indian Territory, principally in Oklahoma. It was purely and simply ethnic cleansing dictated by the U.S. Indian Removal Act signed into law by President Andrew Jackson. It obliterated any trace of the British Proclamation of 1763 that designated the region between the Appalachian Mountains and the Mississippi River as Indian Territory for the "exclusive use of indigenous peoples". Native Americans, like slaves, were not American citizens at that time. That would

² Prairie schooner wagons were scaled down and lighter versions of the Conestoga wagons that were first built in the Lancaster, Pennsylvania region for hauling heavy loads. They were too heavy for the job of moving over rough terrain.



Painting by Robert Lindneux
*Trail of Tears in the Harsh Winter
of 1837 (1942)*

have to wait until 1924 when Calvin Coolidge Indian Citizenship Act. The Removal Act of 1830 provided \$500,000 for transportation and for compensation to native landowners who were forced to give up their land. This explains the presence of the wagons. They were paid for by the government to move the native people off their land and to a less hospitable region as expeditiously as possible. The purpose of this forced movement was to allow the growing number of citizens of the United States to have a place to live.

Black blizzards and the Great Depression

Seventy years later, a combination of drought and the worst economic depression experienced by America (so far) resulted in the migration of over three million descendants of the pioneers who had come to the Great Plains of their own free will. This included all of Kansas and Oklahoma and parts of Texas, New Mexico, and Colorado, territories which were wholly or partially a part of the Louisiana Purchase completed in 1803, when President Thomas Jefferson acquired the French-held territory from Napoleon for \$15 million, or three cents per acre. The non-indigenous people arrived after the forced resettlement of the Indian tribes. They purchased parcels of land to farm, either from the government or from the Indian tribes. When their land stopped producing as a result of the droughts, and the banks stopped giving them loans to stay, they had to leave, and they could not get even that paltry sum of three cents per acre for their land.

"Sure, cried the tenant men, but it's our land. We measured it and broke it up. We were born on it, and we got killed on it, died on it. Even if it's no good, it's still ours. That's what makes it ours-being born on it, working it, dying on it."

John Steinbeck, The Grapes of Wrath

I suppose the Cherokee, Choctaw, Chickasaw, Creek, and Seminole people felt the same way when they were forced to relocate from their lands east of the Mississippi to the Great Plains. They, too, had been born on the land they had to leave, worked it, and



died on it. It's likely that the Native Americans on their reservations, which were also impossible to farm because of the drought, didn't have much sympathy for the plight of the settlers. The "Okies", as they were called when they were leaving, had come in

Henry Ford, Charles and Frank Duryea, and Carl Benz didn't invent their cars to drive along trails of tears. They invented them to carry people nobly for their pleasure and enjoyment. But inventions are like children. You can give them life, but as soon as they are able, they take on a life of their own.



An iron mine in Esch-sur-Alzette

horse-drawn wagons and on foot, like the Indians, but they left in motor-drawn vehicles of every shape and form, preferably with enough carrying capacity to take what they needed to start a new life in California, which is where most of them were headed. They traveled on Route 66, the 'Road of Desperation', the 'Mother Road', 'America's Highway'. It was opened in 1926 connecting Chicago to Los Angeles. It passed through the Mojave Desert, over the Colorado River separating California from Arizona. The first settlers on their way to California passed through the Mojave one hundred years earlier than the Okies. They saw the bones of animals and men in the desert who were not prepared for the journey. When the Okies drove through the desert, they met the carcasses of cars and trucks that broke down along the way and prayed aloud and silently that the vehicle they were driving or riding in would make it all the way through.

When you gotta go, you gotta go

Is there anyone who does not have their own family escape story? I don't believe there is. Kings and paupers alike have all had their flights – for SURVIVAL. Gustav Vasa, Sweden's first king, had his on skis. His father, along with one hundred others from Sweden's aristocracy, were killed by the Danes in what was called the Stockholm Bloodbath. Gustav fled on skis, the only practical form of transportation available to him in the winter of 1520. He gathered an army along his escape route toward Norway, turned around with them, and they returned on skis to retake the country. We celebrate his journey each year with a 90-kilometer cross country ski race called Vasaloppet. Today, the course can be completed on an electric scooter or bicycle – when there is no snow. Four hundred and twenty years after Gustav Vasa's journey, King Haakon VII of Norway fled before the invasion of his country by German forces. He used a combination of planes, trains, and automobiles to arrive in England where he led a government in exile until his country was freed by the Allies.

My maternal grandparents, Nonno Checco and Nonna Rosa Rosati, had planned to spend the rest of their lives in their adopted home of Esch-sur-Alzette, Luxembourg. Their families had lived in the Umbrian town of Sigillo for centuries. The Rosatis had farmed the same plot of land since 1620, although they did not own the land, and the Notaris lived in the village and were day laborers. In 1900, at the age of fourteen, Francesco (Checco), was sent to the island of Sardinia by his father to work in the coal mines in order to supplement the income of the forty members of his extended family living in the farmhouse which they did not own. Two years later he moved to the city of Esch-sur-Alzette in the west of Luxembourg to work in the iron mines. Four years later he married Rosa and brought her to Esch where he was now working in a grocery store. In 1914, the German Kaiser Wilhelm II's troops arrived in Esch on their way to France and told Francesco that he could either join them or take his family back to Italy, and they would

return the next day for his decision. Checco took a third alternative: he fled by train to Le Havre, by boat to America, and by train to Old Forge, Pennsylvania.

My grandmother and their two children, ages three and one (my mother was not yet born), were put on a train with what they could carry, and they spent a year in Sigillo before they could take a ship from Naples to America and join Checco in Old Forge. The ship, the Sant'Anna, arrived in New York on the 1st of June 1915. On the way back to Italy, the Sant'Anna was sunk by a German U-boat. There were no survivors. During that year, Italy had surprised their former allies, the Germans, and entered the war on the side of the Triple Entente (the Allies) after the signing of the Treaty of London on the 26th of April. My mother was born one year after they arrived in America. She married Lawrence Sena in 1943, who survived three years of active duty during World War II, where every day was a fight for SURVIVAL, and here I am.

There are many reasons for abandoning a place and moving on: the fish and the game are gone, the wells have dried up, hostile neighbors have moved in, hurricanes, volcano eruptions, earthquakes, forest fires, floods, mine subsidences, nuclear power plant meltdowns, plant closings, mine closings, your employer went bankrupt, droughts, rising seas, rising crime, unhealthy air, corrupt government, WARS, WARS, and more WARS, or your visa has expired. When the time comes to move, it's essential to have the means to do it and a plan for where you are going. Don't count on the buses or trolleys running. Don't count on the electricity working. Don't count on the gas stations being open. Don't count on the ATMs being full of cash. Don't count on your neighbors making room for you, your family, your Labrador retriever, and your entire wine collection in their Model 3. And don't count on your robotic chauffeur knowing what it should do. Make sure you have your conversation with your Grok, Claude, Bert, or Hal before the time comes to leave, or else you could have a problem.

"Where are we going, Sir?"

"Away! Away from here. Away from the danger. (e.g., fire, flood, invading aliens).

"In which direction shall I drive, Sir? I don't see the danger from here inside the garage."

"The hell with it. Turn yourself off. I'll drive."

"I'm sorry, Sir. I'm afraid I can't let you do that."

This is when we understand why we made sure that there was a "kill switch" put in those cars. We didn't spend the past 125,000 years making sure we could move when the time came to do so to have to ask the horse, wagon, car, or space ship for permission to do so.



About Michael L. Sena

Through my writing, speaking and client work, I have attempted to bring clarity to an often-opaque world of highly automated and connected vehicles. I have not just studied the technologies and analyzed the services. I have developed and implemented them and have worked to shape visions and followed through to delivering them. What drives me—why do what I do—is my desire to move the industry forward: to see accident statistics fall because of safety improvements related to advanced driver assistance systems; to see congestion on all roads reduced because of better traffic information and improved route selection; to see global emissions from transport eliminated because of designing the most fuel-efficient vehicles; and to see everyone who needs a ride get one.

I put vehicles into their context. It is not just roads; it is communities, large and small. Vehicles are tools, and people use these tools to make their lives and the lives of their family members easier, more enjoyable, and safer. Businesses and services use these tools to deliver what people need. Transport is intertwined with the environment in which it operates, and the two must be developed in concert.



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