

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 interior cover of *Italian Highways and Byways from a Motor Car* showing a photo of Gubbio in 1909 when the book was published. Except for the car, it looks the same today.

Living in a City That Is Truly Not Built for Cars

“The hurly-burly of twentieth century life has not yet reached Gubbio, and that is why it presents itself to the visitor within its walls in such agreeable fashion.” – Francis Miltoun¹

TALK ABOUT A CITY that was definitely not built for cars. Gubbio, in the Province of Perugia in the Italian Region of Umbria, wasn't really built for people, either. Mountain goats, perhaps. Its principal public transportation system is a series of four elevators (lifts) that take riders up from one level to the next. To get from the bottom plain of the city (where the green grass grows) to the top level (marked by the arc of the wall about a third of the way up the



mountain visible in this photo) is approximately 175 meters of vertical distance from the plain (equivalent to 50-55 building stories). The elevator journey requires three elevator changes and a few minutes' walk from one elevator to the next.

At the top of Monte Ingino, the 900-meter-high Apennine mountain which has lent one of its sides to the Eugubini, the demonym for the people of Gubbio who built the city, is a basilica dedicated to the patron saint of the city, Sant'Ubaldo. It is visible in the photo above against the skyline. For those who wish to reach the basilica – which is 460 meters vertical distance from the top edge of the city – but do not choose to walk or drive up a winding road, there is a cable car with open air cages, called *bidonvia*, shown in the photo right. Even if it had been running

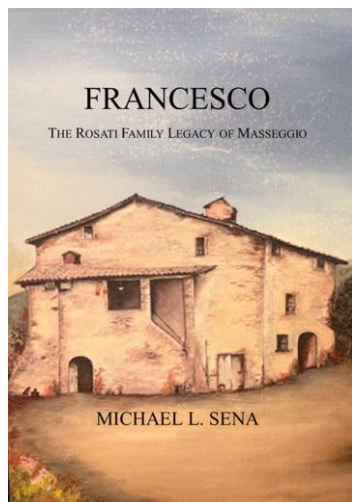


¹ Miltoun, Francis. *Italian Highways and Byways from a Motor Car*. L.C. Page & Company, Boston (1909)

during my visit to the city in late March this year, I'm not so sure I would have taken it. I conquered my temporary fear of flying, but I am borderline acrophobic.

Park and walk

If you look really closely at the cable car station at the bottom of the cables, you will see some parked cars. Most of the parking spaces around the station require a payment. One level below is a free parking garage for visitors, one of four garages in the city. It was at this one where I left my car during the week I was in Gubbio in late March. The garage is at the end of *via XX Settembre*, the street on which my hotel was located. Look at the map below. *Via XX Settembre* is the last, longest east-to-west street at the top of the city, and the cable car station with the garage is where the four-square garden is located, just beneath the legend. The street is named after the date, the '20th of September 1870', on which troops loyal to the King of Savoy captured Rome and forced the sitting Pope, Pius IX, to withdraw from the Palazzo del Quirinale to the Vatican, to lose his status as the head of the Papal States (a country at the time, a



My cousin, Maro Rosati, and his wife Francesca found me through a book I had written telling the story of the Rosati family and Masseggio.

designation it would not regain until 1929²), and to declare himself a “prisoner in the Vatican”. Like most Italian cities, Gubbio has streets named after the victors in the war to unite Italy (called the *Risorgimento*), like Garibaldi and Cavour, and those who came before them, profits of a unified Italy, like Mazzini.³ There are also streets named for heroes of the fight against Fascism, like Matteotti.

I was in Italy for a two-day event in the town of Sigillo on the other side of Monte Ingino. My maternal grandparents, Francesco and Rosa Rosati, were born and grew up in Sigillo. The farm where my grandfather's family lived for over three centuries, but never

² With the Lateran Treaty, an agreement ratified between the Holy See and King Victor Emmanuel III and Benito Mussolini, dictator of Italy, the Pope recognized the state of Italy, with Rome as its capital, and Italy recognized papal sovereignty of Vatican City, making it once again a country, albeit a very small one of only 0.44 square kilometers.

³ The *Risorgimento*, from the Italian word “rising again”, refers to the 19th century movement to unify the countries and states occupying the Italian peninsula.



owned, called Masseggio, had been purchased by a Rosati two years ago. He is my third cousin once removed. His wife found the book I had written about the Rosati family on my web site, and my cousin contacted me. I was invited to the opening of the completely renovated Masseggio as a small hotel. I came to Umbria early, first to visit my good friend and his wife in Milan, Paolo Abbate, who edited Francesco and a few other books I have written on Italian subjects (and who is also a dedicated reader of these pages), and also to experience Gubbio, a place I had visited in 1997 and 2004, but had not stayed long enough to truly appreciate what it would be like to live in a city that was not built for or adapted to motorized transport vehicles.



I took this photo from between the first and second level looking up toward the Palazzo dei Consoli, which is on the third level on via XX Settembre

I drove to Gubbio over Monte Ingino on a cold and rainy Tuesday afternoon, arriving at the northwest gate in the wall surrounding the city in the middle of the afternoon. Once I drove through that gate, I entered a maze of passageways that varied in width from wide enough for two persons to walk abreast to wide enough to allow one row of parked cars, one lane of moving cars, and one person walking very close to a wall of buildings. All the passageways on which vehicles could be driven (i.e., they were not stairs, they were not too narrow for a vehicle, or they were not impossibly winding) were one-way. It would have been extremely difficult for me to find my way from the entrance gate to my hotel without an accurate navigation system or a human navigator sitting in the car with me who knew the city's streets like the back of his or her hand. As I drove, I was sharing the passageways with people on foot. There were no dedicated sidewalks anywhere in the oldest part of city, which is what is shown on the map above inside the walls. Happily for me and the walkers, there were no electric scooters or bicycles mixed in because the cobblestone street surfaces and steep grades rendered those vehicles useless.



Vehicles parked on via XX Settembre. The orange Fiat was parked in the same spot during the entire week that I was in Gubbio. It had a resident parking permit visible through the windscreen

I had a navigation system on my iPhone, and I used only the verbal directions, unable to take my eyes off the road lest I run over a dog or a child bolting from its parent's grasp. I arrived at the hotel, parked my car in a small space reserved for baggage dropoff, left my bags at the reception, and drove to the end of *via XX Settembre* and the parking lot. Luckily, I found a free spot where I would leave my car until I departed at the end of the week. If I had not found a free space there, I would have had to drive to the other parking garages until I found a space. In Gubbio, if you are a visitor, you may not park on the streets. These spaces are reserved for residents. Fines for illegal parking start at €100. On top of that, the streets are closed to all non-resident traffic during the night hours. I made the ten-minute walk back to the hotel, dodging the odd car I met along the way. From that point on, except for a few rides in an elevator, I walked everywhere. During my first full day in Gubbio, I walked a total of eight kilometers. I restricted myself to the old town, which is approximately one kilometer long and five hundred meters wide, sloping on an angle of about thirty degrees. I slept well that night.

A city forgotten or a city that wanted to be left alone

You might believe I had entered a museum and would spend my week looking at fossils of buildings, observing locals dressed in medieval costumes performing obsolete crafts, and mingling with other museum-goers. You would be wrong. Gubbio is a living and breathing city, and even though it was one week before Easter and tourist season had not begun, the streets, shops, restaurants, and cafes were filled with local people. Every café and restaurant I ate at during the week had customers chatting with each other and with the owners and their personnel. I have further empirical evidence of my living city claim. I had forgotten the end of my laptop charging cable that plugs into the electrical outlet. I knew I could have driven to the closest large city, like the province's capital of Perugia, but I searched for a local computer store. Sure enough, there was one just outside the city wall. I walked there in five minutes, pulled out the end that I had with me, and within a few seconds I had the end I needed in my hand. As it happened, the city's best-known *pasticceria* (pastry shop) was just a hundred meters away, so I went there to celebrate my good luck.

The town plan of Gubbio was not a paper exercise

What you notice as you walk on every street and pathway in the city inside the walls of Gubbio is that there are no new buildings and the streets are not paved with bitumen. The city is frozen in the 16th century. Its population has remained at around the same 30,000 inhabitants as it was back then. There are no signs of anyone wanting to change things. There are no empty stores or vacant lots and no going out of business signs. There are no fast food or convenience store chains. There are no traffic signals for cars or pedestrians, no stop or yield signs. What there is is a feeling of calmness that I definitely do not have when I am in Stockholm walking along any sidewalk or crossing any street. Even though when I was driving I had to give my full attention to cooperating with the people sharing the passageway, I wasn't struggling with an overload of bus lanes, bike lanes, bikes, and scooters going the wrong way, opaque laws for where and for how long I could park. Do I yield? Will he stop?



The Teatro Romano was built in the 1st Century B.C. and was able to seat up to 6,000 people

The permanent settlement of what became Gubbio dates from the latter part of the Neolithic (New Stone Age 12,000 – 2,000) period, around 3,000 B.C. It was not until the middle of the Bronze Age, around 1,400 B.C. when the number of settlers increased and began to inhabit the slopes of Monte Ingino for defensive purposes. The hilltop was reserved for rituals, and the plain was a moist woodland. During the 1st Century B.C., the city, which was given the name Iguvium, became a *municipium*.⁴ Its residents were known as Iguvini. After Rome fell, Gubbio suffered the same fate as many other Roman cities, being attacked, sacked, and destroyed. Gubbio

⁴ A community incorporated into the Roman state. Initially, inhabitants of such municipalities were considered Roman citizens without voting rights. Voting rights were granted to some cities, and they maintained a certain amount of autonomy, for they were permitted to retain their own governments as well as their local magistrates. The municipia remained under the jurisdiction of Rome in matters of foreign policy, and they supplied Rome with troops and were not permitted to mint money.



During the 12th and 13th centuries, armies of the Ghibelline communes usually adopted the war banner of the Holy Roman Empire – a white cross on a red field – as their own. Guelph armies normally reversed the colors – a red cross on white.

was rebuilt, and after Charlemagne, the Holy Roman Emperor, destroyed the Kingdom of the Lombards in 744 A.D., Gubbio became part of the donation of the Exarchate and the two Pentapolises⁵ to the Pope, forming part of what became the Papal States. What followed was a millennium of wars that shaped Gubbio, just as they shaped most of Italy's cities. Those walls around the city were not built to keep the city's 30,000 intrepid inhabitants or mountain goats in. They were built primarily to keep the inhabitants of its neighboring cities out. Every now and then, foreigners like the Longobardi, Vandals, and Hungarians swept through, but the real enemies were, on the one hand, the supporters of the Pope, called the Guelphs, and on the other hand, the supporters of the Holy Roman Emperor, called the Ghibelline. Battles between these groups between the 12th and 14th centuries determined who sat inside and who were the enemies at the gates, with the winners and losers moving in or out depending on the result of the tussles. Gubbio started out in the Ghibelline camp, wishing to remain outside of the Papal States.

At the beginning of the 13th century, with the Ghibellines in power, the city flourished and many of its most impressive buildings were built, including the Palazzo dei Consuli, the Palazzo della Podesta, and the Cathedral. The Guelphs prevailed in 1263 and ruled the city until 1350. During this papal period, the great public palaces were constructed and the large aqueduct was completed. Gubbio was allied with Florence, Siena, and Perugia, and actively supported these cities in their wars. In the late 14th century, it broke free of the Church and remained so for three centuries. It was during this period that the city became a Renaissance center and developed its crafts industries which continue to this day, including ceramics, wood, and wrought iron. In the beginning of the 17th century, it returned to being controlled by the Church and its period of wealth and prosperity ended.

Gubbio's defenses were built to keep attackers at bay, with enough food and fresh water inside the fortifications to outlast the food and water of the attackers. Like many of the cities in the vicinity, Gubbio was built on the high ground with reinforced entry gates. If the attackers managed to force entry through one of the gates, they found themselves in the spaces between building which were narrow and circuitous with steep inclines to break up the attackers into small groups that could easily be ambushed. Just about the time that canons began to be used in Europe, in the middle of the 14th century, the major battles over Gubbio had been fought. A siege of Gubbio could have been conducted from above and below, and cannonballs would have pulverized the city's buildings, palaces, and simple residences alike. That did not happen. What did

⁵ The Exarchate of Ravenna was a Byzantine administrative and military province established in the late 6th century to govern the former Western Roman territories in Italy under the Eastern Roman (Byzantine) Empire. It was created during the reign of Emperor Maurice (582–602) as part of a broader imperial strategy to consolidate control in regions vulnerable to external threats. Over time, Byzantine authority in Italy weakened, and by the mid-8th century, the exarchate had effectively collapsed under Lombard and Frankish pressure.



happen was the Plague. Its first appearance was in 1348, killing almost half the population. Cultivation significantly decreased because there were not enough healthy men to farm the land. Woodlands regrew, and the economy shifted toward animal husbandry as farmland was converted to pasture.

An event occurred in 1155 A.D. that resulted in the bishop of the city becoming a saint and the citizens of Gubbio (and the sister city of Jessup, Pennsylvania, a Borough in Lackawanna County for which Scranton is the county seat) celebrating his achievement. Bishop Ubaldo Baldassini had successfully led the forces of Gubbio in battles with its rival cities of Spoleto, Assisi, Perugia, among others. When the Holy Roman Emperor and newly crowned King of Italy, Frederick Barbarossa (Red Beard), was convinced by disgruntled and exiled Eugubini to attack the city, he was met by Bishop Ubaldo and consuls of the city. They held negotiations, and, as a result, Barbarossa not only decided against attacking the city, but parted company on friendly terms and gave gifts to the city.



The Piazza Grande, between the Palazzo dei Consuli and the Palazzo Pretorio, is filled with the supporters of the three saints. This is where the race begins.



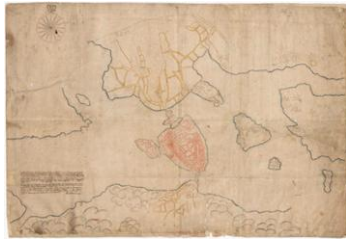
Each year, on the 15th of May, Sant’Ubaldo’s achievement is commemorated with the Corsa dei Ceri (Race of the Candles). It is a procession rather than a race in which three towering wooden structures, each weighing half a ton and topped with a statue of a saint – Saint Ubaldo, Saint George, and Saint Anthony – are carried at a run through the steep and winding streets of Gubbio by teams of runners known as *ceraioli*.⁶ There is no official winner, and the Sant’Ubaldo team always arrives first at the goal, the Basilica di Sant’Ubaldo. The purpose is not to defeat the other teams but to honor the saint and keep centuries of tradition alive. In 2013, UNESCO recognized the Festa dei Ceri as part of Intangible Cultural Heritage, “stressing its importance in preserving local identity and social cohesion”.



Social cohesion; shared goals; community and family; cooperation

The comparison to what communities in America – and an increasing number of European ones as well – have come to celebrate is stark. They celebrate individual cultures and individual identities. The Italians have their Festa di Italiani, the Irish celebrate St. Patrick’s Day, Mexicans celebrate Mexico’s national day, and the pride parades celebrate sexual orientation. There may be fierce fights in Italy over which party will lead the government, but nowhere does the importance of shared goals and social cohesion manifest itself than in how a community functions. If the government functions for the benefit of the inhabitants, it shows clearly

⁶ <https://italoamericano.org/festa-dei-ceri-gubbio/>



Stockholm in 1625



Stockholm in 1844


in the way that people positively interact with one another. If it functions for the benefit of a political party winning points so that their party members can continue to enjoy the benefits of being in power, it shows in the way that each tribe treats the other, sticking the sharp point of a pencil in the eyes of their opponents. Raising parking fees and fines, eliminating parking spaces, closing car lanes, stopping all but electric cars from entering specially designated areas satisfies one group of voters while angering the others.

Illogical and destructive behavior by the “We Know Bests”

When wheeled vehicles, initially pulled by horses and oxen, became the primary mode of transport used for moving people and goods, old walled cities with their narrow and circuitous street patterns were a hindrance to growth and progress. Residents built extensions to existing walled cities, expanding their cities’ population and accommodating wheeled vehicles at the same time. Cities expanded because walls were no longer a defense against attacking armies, and because people no longer needed to depend on their own two feet to take themselves to where they needed or wanted to go, and goods could be delivered to places in and around the cities during the course of day that would have taken weeks or months to do without vehicular transport. Stockholm grew into the open areas surrounding Gamla Stan (Old Town), Manhattan grew beyond its walls at the tip of the island to the north, London spread in all directions from its bastion at the London Bridge crossing of the Thames. Gubbio, too, built outside its walls. There, you can find sidewalks, paved streets, traffic signs and traffic signals, filling stations, and supermarkets. When I went out of a gate in the wall to find the computer charging cable and then made a stop in the pastry shop, I felt like I wanted to get back inside the walls where it was more calm.

Eventually, motorized vehicles replaced the animal-powered vehicles, but the rights-of-ways in these city extensions retained their original forms. Cities that were built after the walled-fort era used the pattern provided by the extensions, not the pattern provided by what was inside the walled cities. Streets in the extensions shared the space between buildings on either side of a right-of-way with pedestrians, and the area designated for pedestrians was delineated by raising the surface of the “side walk”.

During the past fifty years, in the name of livability, politicians have been doing all they can to make it impossible to use four-wheeled, motorized vehicles in our cities—except for the super-sized kind in the form of buses or those riding on fixed rails in the form of trolleys. It is politicians who are doing this, and not priests or doctors or shop keepers, because it is the politicians who control the purse strings on all the money they take from residents in the form of taxes, permit fees, and fines. It is the politicians who determine who gets to do what, like whether a major thoroughfare can be closed (as was done in Paris by the Mayor) or declared two-way for everything but cars (as was done in Stockholm by the head of the traffic department). But making it difficult or costly to use




motorized vehicles in cities that were built for them is like having a library with no books, running a restaurant without serving food, charging people to fish in a lake that has no fish, selling tickets to an opera that has no performers. Not only is it ridiculous; it is painful for the people living in those cities. Instead of making their lives easier and more comfortable, actions by the “we know bests” make moving around a struggle, an unnecessarily uncomfortable struggle.

Owning a car and bringing it into a city makes you a pariah, at least that is how I felt when my wife and I drove into Stockholm each month to stay at our apartment in order to visit family and friends, see the various exhibitions, tour the bookstores and shops, enjoy the opera and theater, and to try to take part in the cultural life of the city where my wife and her family had lived and grown up, and where I had lived to a formative period in my life and where my wife and I met and were married. Taking the train was definitely not an option, and the cost of two taxi rides for the 80-kilometer trip was almost equal to the condominium fees for a month. But gradually, the number of on-street parking spaces were reduced without adding any off-street capacity. Parking fines became draconian. Parking fees were doubled, then tripled and quadrupled, so the cost of parking for a five-day stay equaled the taxi fare to and from Strängnäs, our primary residence. After my wife died in June of last year, I wanted to maintain my connection to Stockholm but decided it was a struggle that was just not worth the fight.

If politicians were really serious about eliminating cars from their cities, they would reshape their streets from the ground up – literally – to make the streets difficult to use for any type of vehicle, including bicycles and scooters as well as cars, trucks, and buses that compete with pedestrians. They would get rid of sidewalks entirely, tear up the bituminous pavement and cobblestone all the streets, making sure that the surfaces are as uneven as possible. They would eliminate all on-street parking, restrict the entry of all motorized vehicles except those used for services and emergencies. This would be a fool’s exercise, of course. The cities are too large to cover on foot from one end to the other in a morning or afternoon. They are too flat or their slopes are too modest to discourage vehicles. They were made for vehicles to move people and goods on roads so that more people could share in what the city offered in terms of wealth, protection, and social interaction, and for people to walk on sidewalks without having to mix with those vehicles. This simple fact seems to have been totally missed by our latest generation of city planners and politicians.

The inhabitants of the old city of Gubbio choose to live there, either because they have inherited their culture and their homes from their ancestors, or they have convinced themselves that they want what Gubbio offers. They want to experience the culture of their city, one that was formed six hundred years ago and is still lived



today. Each inhabitant is probably a member of one of the three teams of saints, and they don their colored scarfs, hats, and jerseys on the 15th of May each year. They frequent the cafes and restaurants, they buy their daily needs in one of the shops, are members of one of the churches. They like the fact that the hurly-burly of twenty-first century life has still not yet reached Gubbio, and that life within their city's walls remains agreeable. Francis Miltoun would, no doubt, approve. But both he and I got to Gubbio in a motorcar, and we left in one.



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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