

Abstracts in English

The Line in the Landscape

Fabio Manfredi

A line is a track or object, rectilinear or not, that connects two points—the beginning and the end—each of which are called extremities. A line is intangible, imaginary, theoretical and, therefore, ambiguous, generic and difficult to define. It represents the consequentiality of points, things, words, facts, and elements. Even when there are interesting variations of dotted, broken and fragmented lines, all the elements they include are interconnected and follow one after the other.

The anthropologist Tim Ingold attributes a dynamic nature to a line, and notes that any physical entity becomes a line when it moves, without the need for creative ambition. We too become lines as soon as we move, he explains. Our movement in space traces a line that is more or less visible and complex. The way in which we move, stop and restart produces a fast line or a broken line, a segmented line or straight line. So, when going from one location to another, and then to yet another, and stopping along the way, we draw an invisible line in the landscape that connects different places.

A road can obviously be thought of as a line that unites place A with place B, made up of a sequence of intermediate places between these places. Indeed, it is not difficult to establish a close relationship between a road and a landscape. It is part of it much like a line on a paper. However, it is more interesting to think of roads as a baseline that enables us to trace many invisible lines and place our menhirs or milestones on them; in other words, a baseline for enjoying the landscape.

We establish a relationship with the landscape from the lines at our disposal, imagining trails that connect places which run through many other intermediate points, sketching our enjoyment of the landscape. Roads and paths progressively guide us, their layout suggesting a way as well as pace with which to traverse them; it is what we call space-time. They propose how to go from A to B and how to enjoy the places in between them. They propose changing speed, slowing down and stopping, and offer us the possibility of taking control of the environment, of perceiving and getting to know it.

The relationship between mobility and landscape lies hidden in the abstract concept of lines. This abstraction suggests there are not only spatial and environmental problems, but cultural and social issues too. It also suggests that a road is not a line that goes from point A to point B; it determines what is in the middle, the intermediate landscapes.

When we travel along a road, we attach special significance to the landscape. That is why the relationship between mobility, landscape and people increasingly involves more and more fields of knowledge, and the road has become a kind of com-

mon ground for geographers, anthropologists, sociologists, photographers and writers.

According to the European Landscape Convention, a landscape is “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”. The landscape exists because there is someone who looks at it and gives it a meaning. According to the earlier definition, the purpose of a road in a landscape is evident: a road includes everything around it and widens our point of view with respect to knowledge, measurement, time, memory, ideas and the imagination. When we are on it, we perceive, remark and classify the landscape: first with our perception and later with our activities. This is why reducing the relationship between the landscape and roads to a problem of mitigation—as has often been done—is a completely reductionist approach, because it tends to limit their value and essence. In this sense, mobility can be seen as a landscape strategy.

Today, in the race for environmental sustainability that characterises our anthropogenic era, we are addressing our concerns regarding the landscape in an increasingly multidisciplinary and inclusive way. We must face the multidimensional complexities of the city; the mutual interdependence between urban infrastructures, food production and waste treatment; the production and distribution of energy; heat islands, and data flows. We are promoting an alternative and credible future, and we are undertaking less aesthetic and more ethical landscape projects which aim to achieve more complex and ambitious goals.

Reducing the field of research to the equivalent of a few areas when addressing complex issues such as the relationship between movement and the perception of landscape, the identity of places, our understanding of the landscape and the relationship we establish with it, would be a contradiction to this expansion of horizons and interests.

I. Roads and quality landscapes

Reconciling roads with the conservation of biodiversity

Carme Rosell

Roads leave a very deep imprint on the landscape and functioning of the ecosystems they cross. Despite the fact that many of their effects are not visible to the naked eye, the presence of a road, and the traffic that uses it, radically modifies the communities of wildlife fauna and flora that it runs through. The field of study called *Road Ecology*, that scrutinizes nature and roadway infrastructure, is a complex and fascinating science, much like all those that explore the frontiers between different areas of knowledge.

The effects of roads on biodiversity are numerous and have been described under the generic term of *habitat fragmentation*. In any case, the magnitude of their impacts will depend on the features of the roadway layout, the intensity of the traffic they carry and the vulnerability of the surrounding habitats. Therefore, the design and application of measures to reduce these impacts must be adapted to the conditions of each specific place.

Notwithstanding, roads also shelter innumerable wild species that live in the habitats associated with the infrastructure: in the margins, in the specific components of drainage systems and in the roadworks aimed at restoring the pathways of trails or courses of streams, as well as passages used by animals and other general connective structures. A road is a good illustration of the distance that separates the natural from the urbanized in our landscapes. In reality, nature coexists with roads, with tar and concrete. A harmonious relationship between them, or not, will depend on how we design, construct and maintain roads, and how we handle the habitats associated with the infrastructures.

Road management offers opportunities for contributing to conserving biodiversity and halting the considerable loss of species occurring all over the planet. Thus, we can utilize road margins in a manner that is beneficial for threatened wild plants, create protective strips against forest fires and apply protocols for the early detection and eradication of

invading species. Avoiding always the use of toxins, such as herbicides and plant protection products, that can seriously harm not only wild animals and plants, but also the health of humans when they disperse into the adjoining terrain. The improvement of habitats can help recover species and natural environments as well as reduce any impacts, although we must also guard against creating ecological traps that lure wild animals into dangerous areas.

Roadways also incorporate elements of green infrastructure, such as passages for animals and, in general, structures that favour connectivity. These elements increase road safety by making it possible for animals to cut across the countryside using safe routes (instead of crossing the roads, with the consequent risk of collisions) while also benefitting habitats and wildlife species by reducing the risks of mortality and facilitating their movements across the landscape.

Finally, it must be pointed out that the art of making roads compatible with biodiversity must be approached from the perspective of the ecosystem that takes into consideration the repercussions of each action within the context of the fabric of ecologic relations and processes of the systems existing in the area surrounding the roads: Only in this way will we be able to define the most appropriate place for each action and obtain all of its potential benefits.

The Transformation of Infrastructures from the Standpoint of the Landscape. The *Passante di Bologna* Project

Carles Llop and Cristina Tartari

The area of Bologna comprises the geographical axis for the north-south connections of the Italian transport system in terms of both rail and road networks. The motorway that runs around the city, called *Passante*, was constructed between the 1960s and 1980s and interconnects the main national and regional traffic routes in addition to accommodating local traffic from areas surrounding the metropolitan area of Bologna.

The motorway, along with the ring road that runs parallel to it, was the subject of debate for many years. Finally, in April 2016, the Italian regional, metropolitan and municipal authorities, together with the concessionary company *Autostrade per l'Italia*, agreed on an intervention project in an area covering thirteen kilometres. This project involved adding several lanes to the motorway to reduce congestion and to improve connections with the ring road, increasing the width of 41 meters to 61 meters. In addition, the project foresaw other inter-

ventions of an environmental nature as well as improvements in the surrounding urban road network to improve mobility in the territory.

The new *Passante*, or bypass, was approached as a regional opportunity to improve the quality of the city and the neighbourhoods surrounding it. A new examination of the intervention area allowed for certain basic working pillars to be established: the network of urban mobility to improve accessibility and connections with the ring road; the intermodal system between the latter and the public transport network; the re-modelling of the public space around the infrastructure; environmental mitigation through new green areas; a network for slow mobility (bicycle lanes) to connect parts of the city currently disconnected; acoustic mitigation (barriers and tunnels) and the contribution of works of art through an integrated project identifying with the Bologna ring road.

This series of interventions would have to contribute in the medium and long-term to building the new regional park of the *Passante di Bologna*, designed to become the benchmark for this kind of infrastructure. The project proposed the *Passante* as a continuous ecosystem, alongside the infrastructure, although sometimes its continuity was forcibly broken, like a mosaic made up of different elements (gates, corridors, routes, parks, works of art) within the framework of the regional park. It was seen as an opportunity to reshape new landscapes and connections between territories that are physically side by side, but distant from each other because of infrastructural barriers.

The design criteria adopted for the urban insertion of interventions were aimed at building an authentic urban and environmental axis along thirteen kilometres, made up of urban and ecological connections to which new architectural designs would be added in order to go beyond the traditional roadway infrastructure image: a continuous thread, a spit around which connections of all kinds would be woven. The *Passante* was contemplated as a single element in the urban context (like the wall of a castle or a hill girdling the city from the north) that could improve quality of life in the region. From within, it was perceived as a platform from which the region emerged; from with the outside, it was an infrastructure integrated at the confluence of the urban and rural areas.

The concept of the project was developed from an examination of the territory associated with a tangential arch starting in the west and covering the entire northern part of the city towards the east. The two regional pillars delimiting the arch are the Reno river to the west and the Savena canal to the east. Other important environmental factors can be found along the arch, including the southern and northern plots, the slopes of the forest belt, the regional park along the Navile canal and the artificial hill to the south beside the Savena canal.

In addition to the environmental elements, the area had municipal services located nearby, such as sports facilities or shopping centres, as well as other strategic metropolitan points such as the airport, trade fair grounds, the food and agricultural centre and the agricultural FICO complex, that were assessed from a unitary perspective in close relation with the ring road system.

This longitudinal examination led the project to a restructuring of its transversality which had always proved a barrier, initially because of the ring road to which the high-speed train was added. It, therefore, became clear that there was a need for a regional park along the ring road not only as a cross-cutting point of connection, but also to connect the areas that ran longitudinal to the infrastructure arch.

The phase of conceptualisation was allocated to better understand and interpret the territory and its neighbourhoods. This entailed studying the insertion of the urban infrastructure while developing its six figurative spaces that would later be dealt with up to the level of the executive project: the functional areas earmarked for defining the nine territorialities crossed by the infrastructure, the gates, the parks, the routes, the corridors (underpasses and overpasses) and other elements such as acoustic barriers and galleries.

Regarding the specific planned interventions, the remodelling of the twelve gates of entry into the city deserve to be mentioned as they were transformed into an symbol of the city's identity that enabled intermodal and mobility projects to be developed as well as interventions in the network of bicycle lanes aimed at encouraging slow mobility. The total budget foreseen for this project was 750 million euros, which had to be provided by the motorway concessionary company.

The project, which included citizen participation activities, was developed up to the execution phase between April 2016 and December 2017. The finalisation of the interventions was foreseen for 2021, but after a period in which work was suspended, the Italian Government proposed a revision of the project in the spring of 2019, with the new name *Passante Evoluto*, with another consultation with local bodies to be held in the autumn of the same year.

Identifying and Assessing the Heritage of Modern Roads

Rita Ruiz, Francisco Javier Rodríguez and José María Coronado

Awareness about the heritage of roadways still has much room for improvement. This text, therefore, sheds light on the value of this heritage by follow-

ing its evolution over the past three centuries and specifying the basic challenges to be faced by any strategy that identifies or protects roadway heritage as well as some of the main characteristic values of this infrastructure.

Throughout the eighteenth century growing economic changes and reforms propelled by approaches characteristic of the Enlightenment in many European countries influenced public works and specifically the transformation of roadways which began to be projected by engineers. The roadway network designed for animal traction consolidated the so-called historical corridors of transport today and were used, with little modification, until the appearance and initial consolidation of the automobile in the early decades of the twentieth century. From this point onwards, the characteristics of vehicles required successive improvements of the roadways. These activities brought about an in-depth alteration in these infrastructures and saw the progressive disappearance of elements and buildings that formed their landscapes. On very few occasions, the construction of alternative roads to avoid crossing through certain towns or the twisting routes of mountain passes have allowed the formal features of old roadways and some of their archaeological elements to remain intact.

This brief historical review of the planning and development of roadway construction techniques from the eighteenth century until the end of the twentieth century in Spain allows us to understand the current layout of roads and how these contributed to shaping their landscapes.

The lack of awareness about the value and vulnerability of road suggests that it may be necessary to outline strategies aimed at analysing and assessing it with a view to its conservation.

The specific features of roadways that must be considered when identifying their value are their geometrical layout (distribution and elevation), their cross section (width, land movements, paving), the structures (bridges, drainage works), the auxiliary elements (road signs, contention systems) and related buildings (hostels, homes of roadworkers, auto repair workshops, petrol stations, etc.).

In addition to these specific elements, an assessment of the roadway heritage must include the whole set of elements that make up the infrastructure. Thus, the heritage value of any intersectional element must be interpreted within its context and must contribute to increasing the value of the patrimonial asset of the entire infrastructure.

In addition to the traditional assessment criteria of any property (historic, identity related, aesthetic), a correct consideration of the heritage dimension of roadways forces us to foresee other criteria more specific to engineering works. The infrastructure affords a clear testimony of the evolution of civil engineering and of the forms of mobility since it has normally suffered different interventions throughout its existence.

II.

Landscapes in movement

The Landscape of Transport in the Post-Oil Era

Jean-Pierre Thibault

The oil era has led to such chaotic management of territories that our people cannot be blamed for their ultra-conservationist attitudes when dealing with new installations, structures and equipment, even when they are proposed for virtuous sustainability reasons. What can we do in the post-oil era to overcome this conservationism? An analysis of transport infrastructures could help us to reconcile sustainable development and landscape diversity, and there are many hundreds of kilometres of concrete or tarred roads at stake.

It cannot be denied that roads and railways have played a significant role in designing the landscape, and bridges and viaducts —innovative or not— have become key features for studying the landscape. Unfortunately, the principle of a single function applied to transport infrastructures meant that civil engineers did not pay attention to territorial features, nor did they take mountains, rivers and forests into consideration. This meant that bridges and roads built were always in the same way and became increasingly unpopular with local populations.

The authorities tried to resolve this problem by attempting to make transport infrastructures invisible, before they realised that it was important to emphasise new infrastructures rather than conceal them. This principle continues to be fundamental in the post-oil era given that mobility will entail less movement back and forth. Most mobility will be in the form of collective means of transport for inner-city transfers or for travelling from one town to another, be it by train or tram, by bike or on foot. Nevertheless, it is clear that citizens will not readily celebrate the construction of a new high-speed trainline or tramway, or even a bike lane right in front of their house.

The landscape approach will continue to be an efficient tool to facilitate the construction of necessary infrastructures in the post-oil era. Therefore, it is crucial to describe the links between infrastructure and the surrounding territories from the perspectives of the inhabitants, emphasising the added value that landscapes can contribute, as well as de-

veloping infrastructures designed to enable users to discover the surrounding landscape while enhancing their appeal.

In short, transport infrastructures that will undoubtedly affect our everyday living environment in the post-oil era should not be undertaken without an interdisciplinary approach, without territorial dialogue and without a close link between their usefulness and aesthetic appeal.

Landscapes in Transit

Marina Cervera and Josep Mercadé

The road, unlike a path, unfolds on faraway territories like a carrier of urbanity, widening the promise of a destination that appears, by definition, more interesting than the landscapes that are sometimes crossed attentively and at others with disdain.

The essential value of roadway infrastructure is to generate or provide a faster and safer connection between destinations. Whoever manages the road, promotes it and owns it, submits to everyone who wishes to use it.

Controlling roadway infrastructures for military, political or commercial users was always essential for power, but currently it appears as if the game were played in a different field. The network that moves everything no longer has only spatial vectors, but is primarily digital. We have experienced the exponential growth of the Internet and, after the enthusiasm generated by the promise of a revolution, we are witnessing its corresponding phases of polarisation, privatisation and monopoly.

The huge digital platforms—Google, Uber or Amazon, to call them by name—have not only completely transformed the virtual world and the ways in which we relate to each other, but they have generated a new service supply culture. From new business models based on data mining and the intermediation of services, a new manner of behaving is spreading in which the overvalued individual—the customer—is won over and made loyal by the constant improvement and provision of services.

Therefore, an entry into the spatial vector that will affect cities, infrastructures and everything that we call the built environment is being planned from the digital world. Such is the case of the designs from Google's Sidewalk Lab in Toronto or the new concepts from the Uber Advanced Technologies Group. The argument, most certainly, is that the urban metabolism can only be handled by managing the big databases, since they enable informed spatial decisions to be made that anticipate, coordinate and flexibly manage flows and behaviours.

Thus, it appears that the motorway as a route can only be correctly managed by whoever controls

the technology of the autonomous vehicles that circulate in it. If, as it appears, the future of roadway mobility will be passive, thanks to cars and buses that will be self-driven by a central brain fed with data in real time, security and speed are factors that will soon be externalised in our experience of the road. Thus, it is necessary to foresee how all this new technology will bring about substantial alterations and regeneration in urban and territorial roadway infrastructures.

A counterweight to a technological leadership of these dimensions will therefore be required, a voice that claims road services that take social and environmental needs into consideration. A new culture and ethics hand in hand with new mobilities. On the one hand, because the possibility of reforming the road artefact and guiding it towards a new role as provider of ecosystemic services lies in the hope of a technological change. On the other, to enhance the comfort, health and experience of the people who will be using them.

Let us remember that, as usual, the architecture of roads will persist in a moving landscape. The remainder, the forms of mobility, will disappear. If we have known how to generate quality experiences around them, they will be transformed into knowledge. But, above all, it is important to know if the ephemeral mobility systems that we will juxtapose to this constructed environment will leave, in turn, a road culture that has a positive effect on the environment and landscapes for coming generations, as a parting gift and an essential duty.

Enjoying the Landscape Through the Road Network. Scenic Roads and Itineraries in Andalusia

Jesús Rodríguez

The landscape has found its way into public infrastructure policies, including those of roadways. The Landscape and Territory Study Centre (Centro de Estudios Paisaje y Territorio) that advises the Andalusian public administration in this area has been working on the relationship between landscape, society and infrastructures for more than a decade. Its task has mainly been covered in three works, two of which have already been published—*La carretera en el paisaje* (The road in the landscape) and *Carreteras paisajísticas. Estudio para su catalogación en Andalucía* (Scenic roads. Study for cataloguing them in Andalusia)—and a third is still underway, which in turn is subdivided into five lines that relate the notions of landscape, society and infrastructures. The first broaches the interrelation of these three elements from a philosophical or sociological per-

spective, emphasising the experience of the landscape through movement; the second looks deeply into the question of scenic roads; the third considers how a supralocal roadway network should be planned with a valuation of their landscapes; the fourth focuses on scenic itineraries, and the fifth sees the road as a way to increase landscape awareness in secondary schools.

All the research carried out by the Landscape and Territory Study Centre has involved professionals from a wide range of fields working to achieve the interdisciplinarity required within the scope of the landscape. Their joint work has led to a consensus on three concepts that have encouraged the appreciation of Andalusian roads. In the first place, roads cannot be limited to their internal functionality, a mere element that links specific points of the territory, because they are also a result of the natural and cultural processes that arise along them. In this sense, some very basic but operational recommendations have been established regarding how roadways must be dealt with in the different phases of construction. The second element of consensus is that the contemporary experience of landscape is linked to movement, be it on foot or in a motorised vehicle. The car is related to the desire for expansion and contact with nature, and advertising has known how to exploit this. Along the same lines, the Landscape and Territory Study Centre has adopted a new lexicon as well as some new tools to define how the landscape must be dealt with as seen from automotive vehicles. Finally, the third concept agreed upon is the fact that people who lack specific training or awareness in this subject find it difficult to read the landscape and understand the processes that happen in it. From there arises the idea that the landscape requires mediators.

The catalogue of scenic roads includes roadways that are particularly important for getting to know the Andalusian landscape and its scenic wealth and value. Initially, 46 roads (1,666 km) were selected that combined recreational and low speed mobility on roads which were representative of the regional and scenic diversity of Andalusia with, to a certain extent, the impulse of new socioeconomic proposals. The roads, owned by the Junta de Andalucía (Government of Andalusia), although new incorporations are foreseen, have a dossier containing basic and technical data, general landscape features and visibility conditions amongst other data. Work on the catalogue was interrupted due to the economic recession, but was useful for detecting the need to establish a basic protocol so that there would be certain baselines in the entire network regarding the treatment of landscape elements and seeing the road in the context of its relation with other landscape values of the region.

The supralocal network of scenic roads is another of the Centre's lines of work. It started with three pilot studies on highly significant spaces of

great value, one of which was La Janda, a region between the bays of Cadiz and Algeciras. For each one of its distinctive elements, a semantic dossier was created which provided details of its importance for interpreting the landscape. A summary report with images was prepared which should be used to get to know the landscape features of the spaces through their roads, interweaving natural, cultural and historical factors. Once this information was available it was linked into the road network and, finally, the criteria for handling these roads in a manner that enabled landscape appreciation were established, fixing observation points and planning interventions following the report.

Unlike earlier cases, all the roadways are taken into consideration in the landscape itineraries, because the goal is to trace big trajectories that enable different landscapes of the region to be connected. Each section includes the considerations that distinguish it and mark its scenic points. The final goal is to create a guide of scenic roads or itineraries.

Finally, the last area of work is educational, in which an attempt will be made to expose the hidden features of the landscapes surrounding the roads. The main tool will be short books for secondary school teachers with solutions for increasing students' awareness about landscape resources surrounding roadways.

Tree-lined avenues, a European Cultural Heritage

Patrik Olsson

Tree-lined avenues, called *alléer* in Swedish, can be found in all European countries. They were created artificially and have a highly distinctive visual effect in the landscape. They are part of both natural and cultural heritage, and they represent symbolic and traditional values in landscapes that are often rationalised and modernised. They consist of two rows of trees along a path and they stand witness to the history of the landscapes in which they are planted, enabling them to be interpreted as a whole from a totally new perspective.

One point we must consider to fully understand the significance of tree-lined avenues is the purpose for which they were built. Generally speaking, some reasons were merely practical while others were aesthetic. The former is related to the fact that an avenue is a long path, which meant it could be very useful in adverse weather conditions: for example, during a sandstorm or a blizzard, when the path is flooded due to a heavy rain or is not visible due to fog. Another practical factor which is often mentioned in historical sources is that tree-lined avenues were easily visible in the dark. Finally, it is

important to mention that the trees on the avenues—or rather, their branches—were an important source of firewood for homes and were also used in making fences and baskets. This is the reason why the trees on these avenues were often pollarded, a practice that heightened their aesthetic appearance, since tidy landscapes were considered the most beautiful in the sixteenth and seventeenth centuries. This ideal, based on the concept of the man's domination of nature, was a determining factor for most of the changes made to landscapes throughout the seventeenth, eighteenth and nineteenth centuries. Paths, boundaries and canals had to be geometrically straight and avenues were the perfect instrument for achieving the archetype of an aspirational landscape.

Tree-lined avenues started from a specific point that was considered important in the whole setting. Therefore, the entire landscape needs to be considered in order to understand the purpose of an avenue and vice versa: no avenue can be understood independently of and in isolated from the context in which it stands.

From an etymological perspective, the Swedish term *allé* is derived from the French word *allée*, that in English is the equivalent of a walkway or path. With the passage of time, the meaning of this word widened to designate a pathway flanked by trees.

In order to interpret the cultural history of tree-lined avenues, it is best to divide landscapes into three distinct categories: those we find in rural estates, those that are next to a city and those found in villages. It is very likely that they all had tree-lined avenues from the sixteenth century onwards, but that they did not become a common feature of the landscape until the eighteenth century. In the rural estates, the avenues tended to start from the point at which the properties began. The same can be said about the avenues next to a city, because in many cases they began at the edge that separated the town from the countryside. These avenues were also used to connect the summer residences of the bourgeoisie and the nobility to the city centre. They sometimes owned a summer house in a neighbouring village, in which case the avenue started from that point. In the case of the landscape of villages, avenues were initially traced alongside rural paths. Sweden used to have a system for assigning paths so that each farmer had to take charge of the maintenance of at least one avenue and ensure that it was visible during a storm. Tree-lined avenues were thus very useful. At the end of the nineteenth century, many private farms moved to the outskirts of villages and built an avenue that led to their new grounds on a private path.

Willows were probably the most commonly used type of tree on the first avenues in Sweden. They also tended to border rural estates and were even planted beside streams and close to pits. Elms and lime trees were already planted in the seven-

teenth century along some avenues that led to rural estates. At the end of the eighteenth century, willows were no longer planted along the paths that led to rural estates as they were not considered as distinguished as elms, lime trees, ashes, horse chestnuts and maple trees. In avenues close to cities, willows continued to be planted until the first half of the nineteenth century, when they were replaced with elms. Something similar happened in village landscapes, although the willows did not completely disappear there.

The twentieth century, particularly the second half, was characterised by the development of road infrastructures in many countries. Tared roads of a greater width were regarded as positive, whereas tree-lined avenues were perceived as something negative. Unfortunately, reconciliation between the two designs was not possible, and this led to the disappearance of thousands of tree-lined avenues, particularly in Western Europe. In this sense, Germany is a perfect illustration of the difference between Western and Eastern Europe.

In recent times, the initiative called Zero Vision, i.e. zero victims of traffic accidents, has affected the management of tree-lined avenues. In some countries, new regulations regarding the distance trees should be from the road, which is generally several meters, has meant that they are not planted anymore. This happened in Sweden approximately twenty years ago. Today, however, the Vision Zero programme is no longer considered an obstacle for building new tree-lined avenues, and alternatives which accommodate both biological and cultural values are being pursued in this initiative.

The avenues in Sweden are part of an authentic European cultural heritage as the trees, in many cases, come from Continental Europe. Seeds, trees, ideas and influences have moved around Europe and shaped the landscape of the avenues. The avenues of willows that line the southern part of the country bear witness to the species originating partly in Germany and the Netherlands, as documented in historical sources. This is due to the fact that some fifteen thousand lime trees were exported to Sweden in the seventeenth and eighteenth centuries. Some were planted in avenues and today, two-hundred and fifty years later, not only are they still alive, but they look magnificent!

Roads and Cinema: Two Directions

Nuria Vidal

A road is a transport route in the public domain and use, projected and built mainly for the circulation of automobiles. This is the definition of a road that can

be found in a dictionary. But I like to define them in a different way: roads, from big motorways to the smallest rural paths, are not places. It would better to say that they are quintessentially 'non-places'. Circulating on a road always entails the hope of something new, different. It is the urgency of escape, from the unknown. It is also the freedom of not being under any obligation while we are on it. If we have defined it as non-place, I think that we can also define it as non-time. Time dilates, expands, is stretched out or contracts according to the experience we have on the road.

I would like to discuss roads and cinema as well as roads in cinema. There is something very subtle that unites these two ideas: road/cinema. Cinema is movement, the road is a place for movement. Time stands still when we watch a film: the story, the world, reality is left on the outside of our life; time also pauses when we are immersed on a road and we leave the context and all our worries aside. During the movie, during the trip, nothing else exists but this: the film, the journey.

If we stop to ponder a little on roads in movies, we will realise that landscapes crossed by tarmacked roads appear in 99 % of contemporary films. And this leads me to another curious reflection on the relation of these two concepts. The cinema was born at the end of the nineteenth century, almost at the same time as motor vehicles. Cinema reflected the modern world of cars and roads from the very beginning. Both inventions happened at the same time, both signified a liberation. The cinema freed up the imagination; the car freed us from sedentary chains and facilitated change. Movement.

If we can establish a type of road classification starting from motorways and highways, through national roads, secondary roads, rural or mountain roads, in the cinema we can talk of road movies, films in which the road is the main protagonist when it is not the only one; or movies that I would define as road sequences. That is to say stories in which the road appears just once, but what happens on it is crucial to the plot. Finally, there are non-road movies, films in which the road is just another backdrop, a simple set in which the action unfolds much like a car, truck or bus circulates.

I have defined roads as non-places. But this does not mean that they are uninhabited, not in the least. In the jungle of roads different families of vehicles, of mechanical creatures coexist. The biggest, the alpha male of the road, are undoubtedly heavy-duty trucks, forever aggressive, always looking down on the rest of the vehicles circulating near them. After trucks come buses; if trucks are gorillas, buses are elephants: heavy, calm, slow moving. But the real kings of the road are cars. Cars travel in groups like wild animals that go together but do not support each other, on the contrary. They watch each other, they bully and chase each other. They protect each other from bigger animals, the trucks, but they

look with disdain on the smaller ones. When these groups become a herd, an accumulation of individuals, the whole system collapses: a traffic jam. In this jungle of traffic in the cinema, there are at least two more animals: they are small, a bother, they are in the way and nobody knows anything to do with them. Motorbikes would be disagreeable flies and bicycles, the much-hated mosquitos.

If vehicles run on roads, it is because someone drives them. Therefore, we can wonder what the characters see from behind the wheel of their cars and also how they are viewed. The cinema is full of subjective shots of drivers. It is very easy to place the camera in the backseat of a vehicle and film what can be seen from there making the glass of the windshield a screen that is open to the world. More cinematographic, because it is impossible to reproduce in reality, is the reverse shot from the outside. The one in which the camera is facing the driver and observes his behaviour within the vehicle. But, what does the character driving a car, a truck, a van observe? First, the road and the landscape surrounding and framing it. Second, they see the other vehicles. But there is a third and very important element that must be considered. The driver observes and pauses in the non-places of the non-place that is the road: petrol stations, motels, bars... All the same, the fact that roads are non-places does not mean that nothing happens on them. Some are very tragic, accidents for example, or breakdowns.

When discussing roads in cinema, there is something that cannot be ignored: the human factor. The people, the characters moving on that road outside the vehicles. Because they are also important and also play a role in the stories. They are the men and women walking on the road, sometimes without knowing where they are going, or those who are at a standstill, characters expecting something, someone to pick them up, a passing bus, that something happens on the horizon they are looking at.

This is a brief review of the many possibilities of roads in the cinema that I hope will stimulate spectators to take a closer look at the roads that appear time and again in films.



Road network, landscape and heritage in Catalonia

Roads, landscape and tourism. Bases for defining a model for Catalonia

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Roads, today, are the main way for travelling to different parts of Catalonia and for wide sections of the population they are a key infrastructure for perceiving and enjoying its landscape resources. In addition, they lead to highly diverse touristic and leisure experiences and can consequently become instrumental in the service of culture, local development and even a tool for activating and conserving the heritage.

In what way can a road contribute to recognizing, to culturally, socially and economically activating, and to spreading the country's landscape values? In a context marked by the climate crisis and deep changes in systems of mobility, the document: "Roads, landscape and tourism. Bases for defining a model for Catalonia", prepared by the Landscape Observatory of Catalonia, within the framework of its collaboration with the General Directorate of Tourism of the Ministry of Business and Knowledge of the Government of Catalonia, presents an opportunity for a landscape to no longer be perceived from inside a vehicle merely as a setting or scenic background but to become the protagonist of new experiences of travelling and connecting with the territory.

The absence of a prior model that recognizes roads of landscape interest grants us the opportunity of contemplating innovative elements and approaches. In this sense, a broad understanding of landscape, along the lines promoted by the European Landscape Convention and the Catalan Landscape Law, offers a very interesting perspective for creating touristic products that are more respectful of the territory.

The document intends to enrich the perspective of landscape through travelling, strengthening

both its patrimonial and cultural features as well as the value of roads. This is why it explores ways in which roads can become tools for awareness and spreading a landscape culture, the goal being to define a model for Catalonia that interrelates its landscape, roads and tourism.

It also proposes a set of criteria to identify roads or stretches of roads that best favour a relationship with the landscape, bearing in mind the existing roadway network and the wealth and diversity of landscapes in the country. We hope it will facilitate the designing of road trip itinerary proposals in Catalonia; contribute to discovering landscapes and cultural features of different less known corners of the country; and help diversify the offer of leisure activities and enjoyment of the landscape.

The relationship between roads, landscape and tourism

The landscape is a prime resource for tourism in Catalonia. This and other reasons lie behind the expectation that a road trip and the contemplation of its landscapes will continue to be highly attractive for a large part of the population and, therefore, offer special opportunities for creating innovative and excellent touristic products.

Many roads in Catalonia, in addition to meeting the original function of uniting, connecting and being useful as roadways for transport or moving about, are also the most popular means for reaching and connecting with its landscapes for many of its citizens. They become the main viewpoints of contemporary landscapes as well as creators of imaginaries.

The maintenance of the original layouts of old roads—particularly of secondary roads—is relevant in more senses than just enjoyment of the landscape. The experience of pioneer countries shows that there is a new appreciation of their heritage aspects. Besides, Agenda 2030 for Sustainable Development of the United Nations has imposed an obligation to consider new mobility models and to promote a form of tourism that is less invasive and more respectful of the territory.

In this context, fostering multimodal and non-motorised systems of transport—chiefly the bicycle—can generate new opportunities for touristic proposals of different levels and movement speeds, and include a much wider and differentiated type of user, while simultaneously recovering more easy-going paces of travelling that give priority to curiosity and time.

Catalan and international initiatives

There are many experiences, projects, and initiatives in Catalonia as well as abroad where roads, landscape and tourism are interrelated. By way of example, the analysis of seven Catalan experiences enabled us to realise that in most cases landscape is seen merely as a decorative backdrop, and that the

attention paid to the roads travelled between nodes of proposed routes is still either very scant or non-existent. At the same time, the valuation of old roads as heritage and privileged connectors of the landscape and its people is on the rise among sections of civil society.

On the other hand, the twenty-one international experiences analysed highlighted very inspiring initiatives, while enabling us to see differences in scale and diversity with respect to Catalan landscapes. Therein lies the risk of succumbing to the temptation of simply imitating the most successful experiences.

A model for Catalonia

In a country with such a great diversity of landscapes, a large part of the roadway network runs through interesting landscapes. However, can any of these roads be considered to have landscape interest? The selection of roads having landscape interest responds not only to the quality of the landscape of which it is a part, but to the type and quality of the experience being promoted in relation to its enjoyment as well as the creation of heritage and landscape value.

Roads of landscape interest are those that enable us to capture their diversity, singularity and complexity, allowing different people and means of transport to harmoniously use them, and to play a relevant role in the enjoyment and creation of patrimonial and landscape value.

A national project of scenic roads must be coherent with the reality of the country's landscape and therefore the huge diversity of Catalan landscapes compels us to escape from strategies of the type: "Roads with the top ten landscapes" or "The outstanding route through Catalonia's finest landscapes". Which are these "best landscapes"?

The recognition of a road that has landscape interest is part of a wider territorial, cultural and touristic project that refers to a renewed view of landscape as a common good. The most relevant elements when identifying potential roads of landscape interest are: the scale and reality of Catalan landscapes; their diversity and wealth of values; a low speed; scarce traffic intensity; the existence of alternative roads for normal traffic; the historical and patrimonial importance of the road; the social interest of the landscape; prior experiences relating to landscape and roads.

Does it make sense to attempt to produce a catalogue of all the roads that might be considered to have landscape interest? It might be more prudent to begin a progressive process that includes only those roads, sections or stretches where a minimum amount of interventions and specific management need to be undertaken. Besides, the selection of roads to be acted upon would require the collaboration of the Government of Catalonia and other administrations that would necessarily be involved

(Provincial Councils, County Councils and City Halls), as well as that of interested private parties. The recognition of a road or a stretch of road as having landscape interest would call for responsibilities—and shared responsibilities—regarding maintenance of the roadway and its equipment, as well as publicising it.

On the other hand, actions related to cataloguing a road must work on different steps: recognition of the road's characteristics; recognition of the landscape features of the stretch; all the work to be done on the road and its surroundings; and establishing conservation guidelines of the important elements of the road and its surroundings.

A project on roads of landscape interest inevitably entails establishing management responsibilities in a national body. At the same time, the managing body must be capable of engaging the active participation of public agents involved in the use and management of roads, landscape and tourism who are in other areas of the same administration or in other administrations. Besides, it would be very important to establish relations with public and private entities in the region where the project is undertaken, as well as with the local population who are the first and foremost in validating the road and landscape as elements of their own, i.e. who must integrate them as elements linked to their identity. The management of a landscape road must also broach two other particularly relevant components: multimodality and cultural management of the project.

What are the representative and interesting stories that we can associate with our roads and landscapes? And what new narratives could we help to appear? These stories, conveniently created, could give rise to attractive narratives that make future roadway proposals meaningful and substantial. In this sense, emotions would have to prevail over descriptions, making them enduring, symbolic, rich and diverse, and the person experiencing them the wiser.

A trip can thus become an experience that collectively creates new landscapes, born from the local community itself, and giving visitors the opportunity to play an active role in the creation of value. The narration can therefore also involve the local community and prompt the exchange of knowledge, understanding, proximity, and a host of other values that must needs be rediscovered.

Motorway Landscapes: The Sequence as Landscape Reading

Eugènia Vidal

Motorways offer a landscape experience with some marked peculiarities. In this case, we will focus on

the design of its associated elements—such as toll stations, service areas, the treatment of margins, etc.—and how it can contribute to increasing awareness of the trip and reading the immediate environment.

Transport infrastructures, and especially highways and motorways, offer an experience that transforms the view of the spaces crossed into a cultural appreciation that makes a great impact on the collective imaginary. It is a specific view, of a unique landscape with great educational, cultural, social and economic potential. Beyond the characteristics of the layout and its surroundings, that particular view is a result of the perceptive conditions that driving on a motorway imposes on the observer and the design of spaces associated with the infrastructure.

In general, however, fast routes are essentially conceived on the basis of their primary function: improving mobility. Thus, despite their outstanding social and aesthetic impact, these infrastructures have scarce cultural recognition and in many cases are even considered as independent elements or scars that must be hidden.

Regarding the design of elements associated with the road, the prevalent idea of a motorway as a purely functional element disconnected from the territory leads to the proliferation of solutions that pay little attention to the aesthetic or cultural experience they offer. The reasons are not only functional but also economic and cultural. Nonetheless, despite the uniformity that is imposed, no two motorways are alike. The main distinguishing element is their relationship with their surroundings.

Due to the particular perceptive conditions, and according to the thesis of *The View from the Road* (Appleyard, Lynch, *et al.*, 1966), reading the landscape from the motorway is characterised by three phases or readings. From lesser to greater complexity these can be grouped together in a spatial sensation, the perception of movement and interpreting the apparent significance. The three aspects, given that they depend on visual interaction with the environment, enhance awareness of the journey and recognition of the immediate environment by the motorway users.

These phases or readings are not homogeneous along the motorway but vary according to the characteristics of the distinct sequences that make up the trajectory. The term 'sequence' transports us directly to the cinematographic world. Its use in the context of the motorway emphasises certain similarities between watching a movie and perceiving the surroundings offered by the motorway. In the cinematographic sense, the term 'sequence' designates a succession of scenes that share the same spatial-temporal framework. In the case of the motorway, or highways in general, it is used to define a visually recognisable stretch along the route. It is identified, above all, from the contrast with preced-

ing and posterior sections, and depends both on the peculiarity of the surroundings as well as the features of the infrastructure and its associated spaces.

From the elements involved in the three basic phases or readings, four basic sequences can be identified: open, closed, milestone and static. The first two are differentiated by lateral vision and the reach of the field of vision. The document that best defines them is the transversal section. On the other hand, the milestone and static sequences are explained by the presence of focal elements of interest or by temporarily stopping the vehicle at a concrete point in the route. In this case, the longitudinal section is the most appropriate document for studying them.

The text analyses each sequence with respect to the spatial sensation, the perception of movement and interpretation of the apparent significance of the landscape. The study is based on the existing bibliography and on the set of analysed interventions in the *Atles de seqüències* (Atlas of sequences) (Vidal Casanovas, 2016), a collection of more than 70 constructed projects, which can be visited, that recognise the aesthetic and cultural dimensions of the motorway. The analysis of the sequences manifests the impact of the design of elements and spaces associated with the route, and how it can enhance or nuance the three phases or readings of the perceptive process that occurs on the motorway.

However, the sequences are not experienced individually but simultaneously and consecutively. Any journey is characterised by the continuous alternation of open and closed sequences and by the syncopated rhythm of the milestone and static sequences. Therefore, the main characteristics of landscape experience from fast tracks are their accumulative nature and the superposition of different scales and interpretations.

With respect to the spatial sensation, it is possible to identify two fairly distinct experiences. One that is more global or panoramic, associated with open sequences, and to a lesser degree to the static, and the other that is focalised, typical of closed and milestone sequences. To this profusion of readings, we must add the specific design of elements in the stretch, that can enhance or nuance the basic spatial feeling associated with each sequence. Thus, with respect to spatial sensation, there are closed sequences that provide relevant information of spaces outside the infrastructure and entail a figurative or symbolic widening of the field of vision.

Contrary to this, the perception of movement is more intense in closed sequences than in open ones due to the presence of objects placed in the close-up view, and in milestone sequences, more than in static ones. Besides, the impact of specific designs that can strengthen or nuance the basic feeling associated with each individual sequence must be taken into consideration. For example, a closed sequence with a uniform finish, without contrasts, can produce a toneless sensation, similar to that of

a fixed background, despite the proximity between the observer and closed surfaces.

Finally, the references regarding the uses and features of areas that are visible or close to the road tend to refer to different spaces. Thus, in the case of open sequences, the design of associated elements normally emphasises the values of the second and third visual plane. The closed and milestone sequences, on the other hand, incorporate both references of the outside space as well as those of the infrastructure itself and even, in a few projects, a combination of both. Finally, the static ones are characterised by a sum of multiscale references. However, besides an allusion to specific visible spaces from the road, many projects introduce a more symbolic or figurative interpretation from the context of the project. They deal above all with the reasons or references that belong to the scale of the road. This phenomenon is patent especially in service areas, hubs and in areas next to big urban centres.

By way of conclusion, the intended design of spaces and objects associated with the infrastructure can enhance a more attentive reading of the territory that is being crossed as well as of the infrastructure itself. This would facilitate the orientation of drivers and an appreciation of the diversity of landscapes visible from the road, both quotidian as well as extraordinary. Design must bear in mind the accumulative nature of the journey and respond to the superposition of scales and perceptions that are characteristic of motorways to be coherent with the peculiar perceptive conditions in which the landscape is observed.

The Landscape of Roads and Transport. An Intangible Heritage of Industrial Society

Jaume Perarnau i Llorens

The concept of an industrial landscape arose in the last quarter of the twentieth century as a crossroads between the original natural landscape and new surroundings created artificially over the years through manufacturing and industrial activities. The industrial landscape, unlike the natural one, was preferably situated in an urban setting. Contrary to this, the industrial landscape within cities today is fast disappearing, absorbed by a new urban landscape that is rapidly growing and, possibly, even more artificial. Therefore, it is extremely important to maintain those elements of the existing heritage that are most relevant and authentic in the urban setting.

Today, when we talk of industrial heritage it becomes increasingly important to conceptualise the

idea that we are also referring to the industrial landscape. A heritage, or landscape, must be prioritised as a whole, as a global heritage and not only as an isolated element. The industrial heritage and landscape are and must be live and direct expressions of the global heritage seen in its totality. This heritage includes objects (movable heritage), buildings (immovable heritage), and acquired knowledge as well as oral and social history (non-material heritage).

From the middle of the nineteenth century, society developed a special sensitivity to the natural landscape mainly due to the way in which photography brought mountain landscapes closer to the public at large, eliminating its tough and inhospitable features. From that point onwards, it was normal for many to understand a landscape as a “natural landscape” and rarely as a cultural, heritage or much less an industrial one. But landscape transformed by human intervention has, in addition to its own beauty, a story to tell.

At the end of the nineteenth century and well into the twentieth century, photography, painting and design used the image of the landscape of industrialisation as a symbol of modernity. However, in the early years of the twentieth century, the concepts of beauty and ugliness began to change. The industrial landscape, despite the initial wellbeing that it propitiated, had to be integrated in the original natural setting, with an attempt to respect it. Coinciding with this new idea, hygienic and health measures were demanded by cities given the extreme condition urban centres found themselves in due to industrial development. False and manipulated heritage landscapes were created within the urban setting, with trees, garden cities, etc. Thus, the authentic industrial landscape can generally be found outside the main urban setting, in non-urban spaces or the outskirts: mining settlements, industrial colonies, big centres communicated by rail, etc.

From the eighteenth century onwards, the industrial revolution brought about great changes in pre-existing landscapes. Imposing manufacturing sites, communication roads, population centres, among others all appeared. Today, industrial landscapes, in use or rehabilitated, are a collective legacy of great historical, aesthetic, symbolic, social and identity value, besides representing a magnificent opportunity to learn history through landscape. Similarly, it must be pointed out that, for the first time, this landscape and its heritage elements are contemporary to the very society that has produced them. The heritage that was conceived, created and used by industrial society fully became an identity reference of contemporary society at the end of the twentieth century. The landscape that shelters it must also be added to this heritage because they mutually condition and determine each other.

The National Museum of Science and Industry of Catalonia (Museu Nacional de la Ciència i la Tècnica de Catalunya, mNACTEC,) decided to go be-

yond objects and immovable elements in its task of spreading the heritage and set up the Museum in the Streets project (Museu al Carrer) that, among other aspects, focuses on the landscapes of roads, communications and transport as particularly relevant elements that need protection and, at the same time, as outstanding elements of identification, evolution and collective social bonding. The goals of the project are, among others, to create an inventory and document the elements of cultural heritage of the industrial society that cannot be found in any museum or collection but within sight and knowledge of any person and in the daily lives of the streets and landscapes of Catalonia; to become a participative and collaborative project that is progressively constructed thanks to the participation of all of society and the entire territory; to contribute to research that values the industrial heritage elements of Catalonia and to incorporate the knowledge of industrial society and its advances into the discourse on global cultural heritage. Roads, streets and landscapes are the great exhibition halls of our most immediate heritage, linked to that industrial society which is changing and has almost disappeared. Knowing how to look at each of these elements with patience and method, at those social references of a specific way of life and period, wanting to know and discover, is a form of cultural knowledge and wealth. The project must enable new interpretations to be made of the common landscape and heritage with rigor and without nostalgia.

The new concept of cultural heritage as global heritage is precisely what propels the heritage of the industrial society forward in this new appreciation of the common cultural heritage of a period and of a society, including, at the same time and in a unitary manner, the movable, the immovable, the intangible and the landscape heritage. The Museum in the Streets, as it is participative in nature, also promotes going to the territory in search of the cultural heritage created and used by industrial society.

Regarding the transport landscape, from the nineteenth century onwards, the relationship between the layout and technologies of roads and railways and the industrial and social evolution of the period is undeniable. These new systems of transport and communications shaped a unique landscape. With modernisation, this landscape, that is still present, is beginning to disappear. The Museum in the Streets project collects items of the historical heritage about Catalan roads and classifies them in three main categories. In the first, the historic roads that include their former layout, the infrastructures (tunnels, bridges, etc.) and the urban crossroads; in the second, the heritage elements of roads such as the homes of roadworkers, customs buildings, fences, milestones, petrol stations or hostels, and finally, the informational elements and signage. In addition, the project includes a specific area dedicated to publicity and information landscapes, with

sections that clearly belong to the landscape of roads and transport.

In this first year of the project, almost 700 elements of heritage interest have been collected in the streets, squares and roads of Catalonia, contributed by 135 people. The elements have come from all over the territory, although the districts of the central strip stand out. In terms of the subjects, it is specifically the transport and communication landscape that has generated by far more social interest and participation.

Drawing up the Torroella de Montgrí Municipal Strategic Plan for Sustainable Mobility

Francesc Baquer and Laura Plana, Cívica

Torroella de Montgrí is a municipality, 65.91 km² wide, located to the north-east of the Baix Empordà region (Girona). It has a resident population of 11,388 and borders on the municipalities of L'Escala, Bellcaire d'Empordà, Ullà, Gualta, Fontanilles and Pals. Despite all that has happened in past decades, the municipality still has a very high percentage of natural spaces today: approximately 57% of municipal land is forest and 30% is dedicated to agriculture.

One of the most important features of this territory is, undoubtedly, the system of towns and cities that has been consolidated as a settlement structure. In the case of L'Empordà, this territorial organisation is even stronger, and the network of population centres is considered to be one of the main landscape values of the plains. The urbanistic changes of recent decades, linked mainly to tourism, has led to what can be termed as the multiplication of the historic polycentrism, and today the population centres of the municipality are no longer only the former centres of Torroella de Montgrí and L'Estartit, but it is possible to identify up to 11 urban centres. In summer, the number of urbanised parts in the municipality increases radically to almost twenty because of the presence of numerous campsites (some with a greater capacity than Torroella de Montgrí itself).

The strategies that guide the planning of mobility in Torroella de Montgrí today are a part of the revised general urban plan of the municipality, on the urban scale, and of the partial regional plan of the districts of Girona, on a regional scale. On the other hand, the Municipal Strategic Plan of Sustainable Mobility (PEMMS), commissioned by the Council of Torroella de Montgrí in 2016, is a strategic planning document that proposes a future urban and political project for the municipality. The goal of the document is to establish the bases and guide

the development of actions that make Torroella de Montgrí more sustainable.

The document is organised around four strategies. Each one contains different spaces that, in turn, include strategic projects. Strategy 1 refers to the territorial area of influence of the municipality and proposes to understand it as an extensive city in the territory. Strategy 2 proposes to recycle the urban fabric of the centres of Torroella de Montgrí and L'Estarrit to adapt them to a human scale. Strategy 3 looks at the different empty spaces in the municipality and proposes to have a system of parks that will allow the municipality to receive the huge fluctuations it experiences without permanently compromising the territory. Finally, strategy 4 focuses on organising mobility in the agricultural plain.

The PEMMS of Torroella de Montgrí aims to be a dynamic plan that proposes a future urbanistic and political project based on a precise reading of reality. The set of actions are conceived to provide the municipality with a new spatial structure that supports the polycentric form of the territory. The hypothesis on the PEMMS poses is that it is possible to reduce the external costs of the current territorial model through a collective project on the spaces for mobility. Contrary to the construction of new infrastructures, it proposes to reinterpret the existing spaces in favour of soft mobility (non-motorised) and collective transport. There is now focus on the spaces and their reinterpretation to adapt them to the human scale. The form of the territory is at the heart of the proposed projects, that start with the idea of an open and polycentric territory in which the empty space becomes a fundamental figure of the project, taking on a primary role with respect to the constructed space.

The position, apparently contradictory, that has guided the drawing up of the PEMMS of Torroella de Montgrí is that, to construct a more sustainable territory, it is not necessary to place limits on circulation nor to forcibly imagine the restructuring of activities in the territory but, quite the contrary, that the project of restructuring the spaces for mobility is the element that can breathe a new life cycle into everything already in existence.

The Catalogue of Roads of Scenic Interest in the Alt Empordà

Anna Albó, Marta Ball-Ilosera and Neus Giró

From Roman roads to motorways, paths and roads communicate and structure the territory. At the same time, they have an influence on our relationship with the surroundings and the landscape. The Empordà region (Province of Girona) has always been a land of passage, and that has left an imprint on its landscape of roads and paths.

The end of the nineteenth century saw the bases of the current distribution of authorities being established between the central government of Spain, the government of Catalonia, the provinces and the municipalities regarding the different types of roads. In the second half of the nineteenth century, new roads were built but, above all, it was the railway network that was promoted. From the early decades of the twentieth century onwards, the progressive use of the automobile meant that the building of roads became increasingly more important. This phenomenon changed everything: the speed of circulation, the width of the roads, the progressive smoothing of the layout, the need for roads with more than one lane in each direction, large land movements and atmospheric pollution. It also changed the way we relate to the environment. Cities and landscapes were no longer perceived from within, in all their detail, but from the outside and from a general perspective.

This tendency accelerated in more recent decades but began to be questioned a few years ago. While neighbourhood protests forty years ago asking for the construction of a road to improve communications can readily be remembered, for some time now it is more normal to protest against their construction, their widening, or to demand that traffic be limited. It is as if the people intuitively feel that some line has been crossed and that the measure of things was lost.

Currently, there is a growing awareness of the importance of maintaining some roads that also care for the landscape; that the pleasure of driving on less congested roads can shift into an enjoyment of the landscape; that the road does not become the protagonist of the landscape but the contrary: the landscape as the main actor in the scene is an important goal that must be achieved in the twenty-first century.

With this objective in mind, the catalogue of roads of scenic interest of the Alt Empordà was created to be used as a tool to help plan the territory in a sustainable manner, safeguarding the conservation of the natural and cultural heritage of the district. The initiative arose from the need to preserve some roads from excessive conditioning projects that would greatly impact the territory, promoted mainly by the Provincial Council of Girona. The inventory of roads of scenic interest is a proposal that came about from reflecting on the different types of roads and the conditioning required based on the territory they crossed.

The catalogue covers the Alt Empordà district and mainly focuses on the local and capillary road network. The methodology to create the catalogue included the following phases: bibliographic references were sought; the roads were classified depending on whether they were a primary, secondary or local road, and their characteristics analysed (width, the daily average of vehicular traffic, acci-

dents, incidents, etc.); a map was drawn up using a geographic information system (QGIS free and open source software) to catalogue the roads and define the scope of action, and a cataloguing of the roads was defined on the basis of their natural and scenic interest as well as their optimum amount of conditioning, using the local Roadway Plan of Girona as a reference (Zonal Plan 2012) that has ample basic information on the physical features of the roads.

After completing the said phases, the first conclusion drawn was that it was impossible to identify a road bereft of scenic interest in the province. The rigor of this conclusion was later ratified during the field work to compare some of the theoretical results on the map with visual reality. On the basis of the geological and geographical formation of the county, the landscapes—from close up or from afar—are of great interest irrespective of where you are positioned in the province. Therefore, it is difficult, if not impossible, to classify a road as lacking in scenic interest.

Thus, it was decided to make an inventory of the roads of scenic interest according to their territorial, cultural and natural sensitivity. The map of the catalogue contains the following classification: roads of scenic interest of high territorial sensitivity, roads of scenic interest of average sensitivity, and roads of scenic interest. The first include those roads that cross protected areas, with different levels of protection (natural parks, natural sites of national interest, areas included in the Areas of Natural Interest Plan). In these cases, the intervention should be minimal and very meticulous—almost like microsurgery and only if it were absolutely necessary. Regarding the second category, there are two types of roads to be distinguished in the district: those to the west of the AP7 motorway and the national A2 highway, and those that are in the region's agricultural plain. In the first case, they are of special sensitivity because of the high density of priority habitats of interest following European regulations, and in the case of the plain, they are roads that connect small towns of special scenic significance. The third category includes roads that mainly cross the Alt Empordà plain, their geometric and physical conditions being sufficiently valid as to not require conditioning.

This catalogue of roads of scenic interest of the Alt Empordà is a first step in evaluating the roadways in the district, their functionality, features and the scenic value of the lands they cross. The big challenge will be to study, observe and reflect on each of the roads in order to act, if necessary, in an honest and simple manner for the good of the territory that they cross, in such a way that they enable enjoyment of the landscape.

Photographic Representation Within the Territory of the Road

Lluís Vives

Landscape is not the equivalent of territory, rather it is a type of visual representation in which the territory is the theme. For a landscape to exist the must be representation in the two literal senses: the physical, considered as the construction of a lit image, and at the same time the mental representation or construction of an idea of reality with real things. Landscape does not exist as an entity without observation; landscape is not the real thing. We could say that the landscape is not out there.

The landscape is possible due to the territory. When the latter is modified and changes occur in the territory, inevitably the possible landscape changes. It also changes when we change the observation of this territory (the physical and conceptual point of view). Both these facts modify representation and the ideas implicit in it.

We also say that landscapes are objects that fulfil the constructive function of reality: paintings, photographs, etc. They are historic documents of the territory and of the thoughts projected in it.

We will now establish a brief and rough classification of the types of landscapes. The first, that by itself is its own type, would be landscapes born of contemplation. We imagine a man, several thousands of years ago, self-absorbed in nature, lost in thought or scrutinising the horizon to see if he could hunt some much-needed protein or to raise the alarm in case of danger (survival above all). Measuring the distances and escape routes, the movements between the trees, the signs of any movement and the orography of the terrain. An analytical look at specific aspects of the territory that end up forming a landscape in his memory. When he has finished scrutinising, the territory is registered in his memory forever in what we understand as a landscape, a landscape that is only exists inside his mind, a mental representation. The primary landscape that already incorporates all the necessary elements to be considered as such.

A second possible landscape would be narrative representation. The writer uses the written word to describe, define distances, place objects and elements in the territory. Also, to note the effects of light, smells and sounds moving in the space and creating a sequence of events. The narrative landscape can be very powerful, because it goes far beyond visual dimensions. In a way, through concepts, it connects directly with the mind and memory, skipping the direct visual perception and constituting an imagined representation.

The next landscape could be the painted landscape. The artist reflects while painting. In this process, the artist recognises the territory, gives it pro-

portion, represents its material elements, evaluates its colours and the movement of textures perceived in the distance, composes and reflects on the physical representation. He dedicates the time essential for possessing it, for appropriating the chosen, identified attributes. There is a certain complacency in the construction; it is similar to the idea of art. In this process, thought comes before (or simultaneous with) the creation of the landscape and determines it.

Another phase in the history of representing territory in landscapes can be identified with the appearance of photography. A photographic representation is a process of creating images that evidently simulate human vision, but with subtle additions. In fact, photography is a technological extension that amplifies the human capacities of producing representations. It enables us to register images that have a certain similarity to the ones produced in our optical system—that is very similar to the optical system of a photographic dark room—which are materially stored outside our brains. Thus, it enables us to recover images and rethink them with this strict objectification; the photo is materially the same each time we look at it and it is instantaneous. These two characteristics make us trust photographic images to such an extent that we have blindly qualified them with the attribute of documentary.

Turning our attention to roads, these paths are human artefacts that interfere with our view of the territory and in the very geological and biological manifestations of nature itself. The road can be seen from the road itself. In this case, what characterises this point of view is its simultaneity with act of travelling along it. The car is a moving viewpoint, almost an extension of the home. Circulating on

a road shows us the territory in movement, in an integrated sum of lit images of trees, mountains, buildings, posts and places that are mostly similar and occasionally different, that progressively move along the wall of our retina. A type of viewpoint that creates a methodology for contemplation and a contextual concretion. Everything is in passing.

The memory of the road is associated with vital experiences. What we see from the point of view of the road when we travel, is the territory from which we form landscapes, but we also see the same road as an element of the landscape, which invokes emotions in the observer to help them to construct an emotional landscape and to help it lay down roots in memory. A road landscape is always accompanied by a narrative, a biographical story. The subjectivity of the journey associated with the creation of landscapes shapes them as landscapes enriched by memory.

The road, imagined as a map, is present all over the territory. The territory can no longer be explained without its presence. It is an unending line. It almost always continues. It is forever unfolding. It is a network that is fitted in the crust of the earth and adapted to the relief of the terrain. It is an element of second nature, overwhelming, transforming.

Roads trace lines on the territory and on maps. They trace our travel itineraries and those of the goods transported on them. They unite points of the territory and at the same time separate spaces that were once related. Roads leading far away or close by are different.

The tracing can be a caress, if it follows the orographic adaptation of historic paths or, on the contrary, a bleeding cut that scars the skin of the territory in its cohesion and continuity.