

Landscape Routes as an Infrastructural Core of Cultural Landscapes; Their Distinctive Role for The Character of Region

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Abstract. Roadside tree avenues are a distinctive element of the landscape of Warmia and Mazury, which is a testament to the history of the region from the Prussian time. Their emergence was imposed top-down and was dictated both by practical and aesthetic reasons. Today they are a problematic heritage in the view of current tendencies of infrastructural development of the country that favour highways and the opportunity to cover the distance between start and destination point as fast as possible. Nevertheless, the literature and conducted scientific studies indicate a change in perception of the in-car experience which underlines a pleasure of travel itself. The research also suggests the growing need for planning route on the basis of the attractiveness of its elements. The work also distinguishes the conditions that must occur for the scenic route be established and put under protection. Moreover, it presents different views of assessing the value of such a road and the cultural landscape in which it is inscribed. It also describes the impact of the individual elements of scenic route on well-being of a participant of road traffic and his perception of the space. This paper attempts to survey the existing trends and actions in development and protection of scenic roads in selected and to present the tree-lined roads of northern Poland on the background of the examples. This has been done on the basis of personal experience and observation, as well as the literature. There have been juxtaposed routes' common elements and the elements distinctive to individual countries and regions. The results of the survey indicate that the scenic route, as a picture of the economic, historical, social and political situation of the place is an infrastructural core of cultural landscape. It constitutes the uniqueness of the region not only from the biological, but also cultural point of view. Then, apart from the obvious economic importance of scenic routes for the development of non-invasive tourism in the region, there is indicated their important role in shaping local identity. In the light of the above, the paper estimates possibilities for protection of tree-lined roads of northern Poland as the network of scenic routes characteristic for the region.

1. Introduction

Roadside tree avenues are a distinctive element of the landscape of Warmia and Mazury, which is a testament to the cultural and technological history of the region. Their emergence was imposed top-down and dictated both by practical and aesthetic reasons. Today they are a problematic heritage in the view of current tendencies of infrastructural development of the country that favour highways and the opportunity to cover the distance between start and destination point as fast as possible. For this



reason, the historic alleys have been disappearing from the landscape of north-eastern Poland in an accelerated pace for several years. On the other hand, the dynamic development of individual car tourism leads to a change in perception of in-car experience. Increasingly, the journey becomes an end in itself. This is emphasized by a number of attempts to develop a new type of navigation and routing. There are conducted diverse studies looking for a suitable algorithm to shape the landscape routes. For this purpose, the ways of perception of particular elements of the road and methods of computer-aided recognition of the aesthetic qualities of the developed routes are examined [1, 2].

This change of thinking should concern not only the tourist managers or IT professionals working on navigational systems, but especially those responsible for shaping the space: architects and urban planners. Improving knowledge and awareness of the importance of the scenic routes should lead to the establishment of new directions for infrastructure design and strategies for existing routes of exceptional historical and landscape value.

The article attempts to introduce the idea of scenic roads: their origins and their impact on the cultural landscape and the road user. On the basis of literature and own research, it describes various ways of valorisation and delineation of the scenic routes and presents them against the background of the general principles of aesthetics. By analysing individual regions, it defines the landscape road as an infrastructural core of the cultural landscape.

2. Landscape roads – definition origins and significance

The road with its surroundings is an inherent part of the cultural landscape characteristic for individual region. It is inscribed in the image of places no less clearly than villages or towns [3]. Undoubtedly, the strongest tradition of landscape roads originates in the United States, where the system of National Scenic Byways is developed [4]. Thence comes the concept of the all-American road, ascribed by the Department of Transportation to the most valuable roads and the general term “parkway”, which is equivalent to a “scenic route” in Europe. Therefore, most of the definitions are derived from just US researchers. In 1987 Blair and Miller defined parkways as “roads and roadways designed especially for pleasure driving” [as cited in: 5, p. 342]. According to statements mentioned by R. L. Kent and C.L. Elliot, a parkway is “a road having roadsides or corridors of high natural beauty and cultural (...) which gives the traveller glimpses of nature, history, geology, landscaping, and cultural activities” [as cited in: 5, p. 342] which also has “potential to provide wildlife habitat protection, improve landscape aesthetic, enhance community pride and identity, and optimize the use of limited areas for conservation” [as cited in: 5, p.342]

Polish researcher undertaking the issue of architectural urbanist aspect of roads, Urszula Forczek-Brataniec calls the road “the archetype of perceiving the world” [6, p. 9]. It is the road that introduces us into a new environment and often provides us with the only information about the place we travel: its character, history, values. The impression that we are left while travelling the route may constitute our desire to return and deepen our knowledge of the region [6]. Growing awareness of the road as a primary calling card of a given place should influence design trends. More attention is paid to the non-technical quality of roads and their surroundings: their deliberate development becomes an element of the tourist policy of the regions [6]. The representative role of the road is not, however, a sign of the present: it was of great importance in the process of city formation in every historical epoch. Joanna Plitt, using the term “the front and the back of locality” [7, p. 140], draws attention to the interdependence of historic cities and access roads. She explains how over the centuries, regardless of the city's characteristic for its time urban layout, the location of the main communication route was planned to in such a way as to advertise the city. As the feedback, there appeared specific city-forming movements, adapting to the road with its architectural and urban composition: by respecting the height, planting tree rows or location of wealthy tenements [7]. It is therefore clear that the appropriately designated scenic route become and may become an instrument to direct sensations, proper for Lynch and Appleyard's theory comparing the sense of spatial sequence in road design to the rules cinema or music [8].

Speaking of directing of impressions and rhythm of scenes, the dynamics as another key feature of the landscape experienced from the road. At the turn of the nineteenth and twentieth century, a significant moment for landscape landscapes in Europe was the spread of the car use. On the one hand, it contributed to the degradation of the nature as mechanical vehicles required better prepared infrastructure. On the other hand, the car as a symbol of speed quickly became the object of admiration for the futurists. During this period, dynamic perception took a special place in art and philosophical considerations, focusing on the absorption of space with which one fuses in motion [6]. These tendencies can be regarded as the basis of conscious development of scenic roads in the twentieth century. Jon Martin Denstadli and Jens Kr. Steen Jacobsen claim that the popularisation of route as instrument for tourist industry depended not only on growing number self-drive tourists, but primarily on the idea of wanderlust as an interest in being in move [1]. The sense of freedom that comes from travel outside the designated timeframe, in conjunction with experiencing scenery and the road through a “continual flux” [1, p. 781] gives the road user an impression of escape from everyday routine. Also the encounter of greenery and nature has a positive effect on the driver, reducing his frustration, as evidenced in the study by J. Cackowski and Jack Nsara from 2003, [9].

3. Valorisation and ways of selecting landscape roads.

Considering the important role and the landscape, touristic and cultural potential of scenic roads, we are still having difficulty determining routes that should be surrounded with special care. Usually, are the road environment and the cultural landscape in which it is inscribed in that are assessed? According to Zube (1980s), four research paradigms for landscape assessment can be distinguished: expert (based on two intellectual traditions: design with fine arts and ecology with resource management, giving priority to professionals using defined criteria), psychophysical (based on experimental psychology, using manipulative capable of producing tangible reactions to the subject), cognitive (assuming that people as thinking creatures do not react impulsively to stimuli and select landscapes that are of value to them; the paradigm considers the reasons for appreciation landscapes rather than types of esteemed views) and experimental (focused on understanding the nature of the interdependence between man and nature) [10].

Referring to this division, R.L. Kent and C. Elliot find the cognitive and expert approach (to which they attribute a dominant role) the most important. They note significant differences in the effects of these two ratings landscapes methods. In the case of expert paradigm, the natural areas were much more probable to have a positive outcome, while the cultural were considered of either secondary importance or of negative impact, recognizing elements such as billboards or commercial signs as traces of human activity [5]. The results of this approach are inappropriate in the case of regions of historic significance, where the mutual relationship between nature and culture created attractive cultural landscapes. Besides, it is difficult today to talk about strictly natural areas: it has been said for long time that the human impact on the environment is so strong that the era in which we live can be termed the Anthropocene: the current picture of the world is shaped the activities of human civilization. Almo Farina suggests even that in present global landscape dominated by economics, the cultural landscapes as the effect of sustainable interdependence and mutual respect of natural, cultural and economic capital are the healthier systems, more resilient to contemporary disturbances than the „untouched” nature remnants [11]. Having completed the research with the cognitive paradigm, basing on the public, it turned out that expert evaluations differ from public ones, which in turn differ according to the origin of the respondent, his age or sex. It is important that the local citizens of the region assess the qualities of roads and landscapes more favourably than experts [5]. This confirms the fact that the landscape road that is part of the cultural landscape of the region gives local societies a sense of community. They identify themselves with the place and, depending on provincial knowledge and sentiments, recognize the uniqueness of their region and feel attached to its character. The most popular, most measurable and practically exclusively applied method of scenic routes assessment is the use of photographs and ratings according to the adopted scale. Unfortunately, although this method allows defining aesthetic preferences for the landscape, it never gives a complete picture of the way

the landscape is experienced because of its stability. Dynamics, weather variability, or rhythm and sequence of the views, so important to the driving impressions, are not reproducible in the case of a photo survey. The method of photo analysis (also using digital technology) is also helpful in research on the establishment of particular navigation systems capable of planning scenic routes [2].

Accepting the imperfection of applied research methods, however, general tendencies in assessing the attractiveness of scenic roads can be noted. One of them is the unique importance of water in the perception of the landscape, which affects the positive impression more than any other element [5, 12]. Natural elements (including open views or adult trees) as opposed to the urban areas increase the probability of selecting the route and finding it attractive [2, 5, 13]. Presence of greens is always perceived as pleasant and relaxing [9]. However, the most positive response is given to the types of views that combine culture and nature: the characteristic for the place elements introduced by man into the natural environment, including the mid-field stone walls in the New England [5] or roadside avenues, complemented with regional architecture in Warmia and Masuria [3, 14, 15, 16]

Although the views seen from the road are fundamental in assessment of scenic route, this is not the only aspect to consider when experiencing and evaluating the specific road by its participant. Recreational infrastructure along the route, including the location of cafes, toilets, campgrounds and viewpoints [1], the quality of road itself: the condition of care and surface [13], the quality of the road itself, the condition of the road and care, but also its composition, course and correlation with surroundings also allows for the full appreciation of the landscape route. An interesting attempt at valorisation of the scenic road is taken by Mary E. Myers, who looks at it against the background of classical picturesque theories created in the 18th century by William Hogart and Edmund Burke. The author argues that the design ideas for landscape roads are derived from the postulates of beauty: “Serpentine Line of Grace”, “Variety”, “Motion” and “Emotion” [9]. Supporting her thesis with research and survey, she implies the directions and principles of landscape road design. The research claims that the geometry of the road should be thoughtfully designed: numerous turns, appearing in determined proportion to the straight sections, as well as horizontal and vertical diversification of its course both enhances the sense of beauty and curiosity and reduces the risk of highway “hypnosis” [9, p.50] (figure 1). Moreover, the scenic road should provide a variety of sensations, not only due to the increased dynamics of the landscape, but also through the richness of roadside elements. A road designed with respect to these rules should positively affect the emotions of its users, creating a feeling of pleasure and relaxation [9]. Additionally, it influences and enriches the cultural landscape of the region, revealing and presenting it and making it possible to be experienced.



Figure 1. Arch and maple alleys along the road towards Ryn (DW642, Warmian-Masurian Voivodship road. The presence of greenery provides a sense of relaxation and shading. Horizontal (a) and vertical (b) differentiation of the road implements the previously postulates of beauty as dynamics.

4. Examples of scenic routes in the cultural landscape of European regions

An example of a region with a unique cultural landscape containing characteristic scenic roads is Warmian-Masurian Voivodeship (province) in north-eastern part of Polish. Its large area is Masurian Lake District. This involves distinctive natural conditions occurring in the region. The dominant feature of the natural landscape is its glacial character and above all the numerous lakes (according to the spatial development plan, there are 1,081 lakes larger than 1 ha, including 320 lakes over 50 hectares, which occupy 5.26% of the general area of the voivodship [17, p. 40]). Also, its diversified terrain is typical for late-glacial areas, where the predominant forms are moraine uplands (plains, wavy) and hills, kames, eskers, sandurs, valleys and melt-cavity occupied by the lake. The forest cover ratio is 30.8% (for 2011), with a national average of 29.2% [17, p. 43]. The environmental attractiveness contributes to the sometimes uncontrolled development of tourism infrastructure (ports, marinas, taverns, sports centres, tourist settlements), which dominated the cultural landscape of the region. However, apart from the tradition of sailing and tourism in the region there can be encountered remains of nineteenth-century cultural landscape, including the specific types of farmland, settlement network, roadside or mid-field plantings, land parcelling systems and numerous unfortunately often neglected palace and park, as well as manor complexes.

Also the alleyways are an inherent part of the cultural landscape. In the 18th century they were established by the Prussian royal edicts, among others those by Friedrich Wilhelm and Frederick the Great, and the effects of massive tree planting along the roads was documented on Schrötter's map from the turn of the 18th and 19th centuries. Especially noteworthy are not only the practical benefits from roadside avenues (for example shading, wind protection, improving the visibility of the road) but also underlined aesthetic and symbolic significance of tree-lined roads. As a composition element they were originally part of the residence complexes, later becoming a visual and practical link between the towns and villages. Their shape and way they are perceived is a result of the adoption of fully intended composite assumptions: the choice of the width of the roadway, the gauge width, the shoulder or finally the species selection and planting method [3]. Occurrence of avenues composed of valuable species of trees (e.g. sessile oak or horse chestnut) emphasized the importance of the road or its particular symbolic dimension [15, 16]. Such examples are among others the historic oak alley in Godzikowo leading to the burial place of the Earl of Nakomiady or the tree-lined pilgrimage route to St. Lipka sanctuary consisting of oaks and chestnuts. Also along the roads of local importance the selection of species (small- or large-leaved lime, Norway maple, European ash) was carried in accordance with clearly defined patterns that lead to standardization of the road aesthetics and preventing the monotony [15]. However, the visual qualities of Warmia and Mazury routes do not only focus on the road itself, but primarily on its correlation with the natural and cultural environment. Tree-lined roads contribute to the complementation of the landscape. They represent the continuity between forests and grazing lands, agricultural areas and lakes [15] (water elements extremely important for the attractiveness of the road in the light of the above-mentioned research results). Their adaptation to the terrain as a result of a compromise between environmental considerations and human action creates a "hodologic space": the space of the possible movement not applying the mathematical rules of geometry (concept of "hodologic space", developed by Kurt Lewin [as cited in 6, p. 49]). Differentiation of the road in the vertical and horizontal plane implements the previously mentioned postulates of beauty as dynamics. Both the appearance of the road (together with the beneficial effect of green on the well-being) as well as the scenery it provides: the elements of the natural and cultural landscape included in the compositional rules of framing, view openings and sequences determine its value. Such a scenic road proves a distinctive approach to nature, becoming a calling card of the region and its cultural landscape.

Unfortunately, contrary to the conscious policy of landscape roads formed over the years for example in the United States, Warmian-Masurian voivodship has not stated its position on this issue yet. The attempt to establish guidelines for actions on tree-lined roads has been taken in the concept of the Warmian Landscape Road [14]. Still it has been developed only for a limited part of the regions so far, and its results remain in the sphere of scientific research, not affecting the formal and legal

situation. Within the planning documents, the term “scenic route” or “landscape road” does not appear in the development strategies of the voivodeship or in specific poviats (counties). The voivodship spatial development plan mentioned the issue of the protection of roadside alleys as historic real estates and as characteristic feature of the landscape [17]. Among the guidelines for the regional road infrastructure there is the recommendation of a flexible, individual case by case assessment of the validity of protection of tree rows located along the voivodeship roads. Such a provision does not appear to provide a guarantee of preservation issues priority. The document also does not mention the reproduction of an avenue or new plantings.

Given that the Warmia and Masuria during the formation of roadside avenues remained under Prussian jurisdiction it is worthwhile to analyse selected regions of the German states (especially those with the largest number of avenues: Mecklenburg, Brandenburg or Westphalia) in the context of scenic routes policy. Currently, in Germany there is a broad awareness of tree-lined roads as part of the cultural landscape that builds a sense of identity. The historical and cultural context of the alleys formation in these areas is similar: as in the areas discussed above, the idea evolved from the park compositions transferred to the estate of the palace to emphasize its status as well as the attitude of the owner to the aesthetics and nature. At the moment when the poorer strata of society, interested in improving their social status began to plant trees along roads leading to their property on a par with the nobility (even if they chose less permanent fruit trees), tree avenues went beyond the border of closed park and palace compositions and started being the lines connecting the villages – the scenic routes.

A new era of tree alleys along the roads was initiated in the 18th century with the infrastructural project imposing creation of art-roads (*Kunststraßen*) [18]. Later, the manual for road construction published in 1814 and amended in 1834, contained not only detailed guidelines on cross section or technical requirements of the road, but also a recommendation for planting along roads the trees "with the widest possible range of branches [19]. It should be noted that the directive provided "pleasant view "as a basic argument, and only then practical and security issues. Many historic avenues have survived to this day A lot of sections less important economically, which survived from the impact of the intensification of transport are planted with trees deriving from these projects [17].

Despite the crisis of roadside trees in the 1960s (when they were cut down as firewood and material for infrastructure development) [18] and the crisis of consciousness in the 1970s (when the massive clearances were motivated by a supposed improvement in road safety), nowadays in these regions they are treated as cultural legacy of value which is unquestionable. This is evidenced by legal regulations and the actions of the authorities and the community for reproduction of alley roads. In Mecklenburg-Vorpommern (the current state of the alleyway is 4374 km of tree rows, including 773 km of new plantings [20]) the protection of the landscape with the alleys is guaranteed by the 1993 constitution as a duty of the land, districts and municipalities [20]. Paragraph 47 of the *Landschaftsgesetz* (1998) explicitly forbids cutting down or even injuring trees along public, private or field roads. It also presents guidelines (such as tree species and way of fitting in the cultural landscape) for filling the gaps in the alleys [20]. This law also applies in Rhineland-Westphalia (3730 km of old avenues being constantly replenished by new plantings [18]). In this region it is also important that many residents and public figures associate alleys with “home and quality of life”, “understanding the landscape as a home”, as well as “sense of security, childhood and holiday” [18, p.6]. In Brandenburg (the state with the highest number of alleys: 8200 km [20]) the protection is applied to trees which are over 60 cm circumference, as well as smaller trees if they are part of composition in the landscape. Each tree cutting must be reported to the appropriate authorities and made available to the public in advance which enables protests and appeals [20].

5. Results and discussions

The studies show different trends in relation to landscape roads. However, they emphasize the significance of aesthetics of the road and the cultural landscape. The question of the viability of landscape roads functioning in the contemporary landscape, as well as the designation of specific directions for their protection and design of new roads, is undeniable. Yet, in order to meet the

tendencies of dynamic infrastructure development, every road should be individually analyzed in terms of its cultural and economic value and potential. In this regard, the region of Warmia and Masuria, due to the small number of roads that are capable of performing important socio-economic functions (only about 1000 km of all roads, according to the road modernization study in the district of Olsztyn [14]) and the lowest traffic on national and voivodeship roads on the background of the country [17] may be a region with a network of aesthetic and scenic roads. Development of infrastructure for economic and transport should be done in a sustainable manner on a basis of in-depth analyzes. The unique cultural and landscape importance of roadside alleys combined with the potential of the natural environment support the idea of creation such a system of landscape roads that would constitute a distinguishing feature of the region, important for shaping the identity. As part of future research, the scope of roads assessed for their landscape validity should be extended, continuing the concept of the Warmian landscape road for regions that has not been covered by it until now.

Essential for the formation and protection of such roads is not only rising the public awareness by education, but above all the adoption of a specific strategy towards them, supported with analyzes, projects and precise guidelines. It is also necessary to establish formal and legal situation of roads in the landscape, as only the legal protection guarantees the inviolability of valuable structures and compositions. A permanent increase in technical infrastructure, even in less economically or metropolitan areas are unavoidable, so the development of the road network cannot be stopped. However, in-depth awareness of landscape can cause that road infrastructure as the aspect perceived as a threat to the scenery can become its advantage. A well-defined route that is inscribed in its surroundings and respects the existing environmental conditions does not lead to fragmentation of space. It can even be incorporated into a whole composition. It does not have to distract man from nature, but even allow one to experience it. It is a specific “core” of cultural landscapes, which enables a sustainable manner of regional and infrastructural development of the region. It has a special landscaping role, but also subordinates to the requirements of the landscape. It obviously affects the increase in touristic attractiveness of the place and the popularization of non-invasive tourism forms. Apart from that, it also has a cultural significance being a result of years of human activity, as well as initiating culture-forming processes itself. It perpetuates the impression of the cultural landscape among the visitors and gives local communities a sense of identification with the region. Around such a “core”, the cultural landscape has a chance to develop in a coherent and consistent manner, preserving its aesthetic qualities and distinctive character.

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