

Chapter 2

Theoretical Discourse





Part 1

The past, current and future role of landscape architects in roadway design



Figure 2.1. A juxtaposition between a getaway road and our urban freeways

1.1 Pleasure driving and scenic roads

1.1.1 The American Parkway

There is evidence of historical concern for roadside aesthetics (Parsons et al, 1998) which can be fairly well documented among professional designers. This may be surprising if one looks at the current the condition of most urban freeway roadsides, where landscape design has played a comparatively insignificant role. In the past landscape architects played a key part in the design of roads. Roads were more than just a means of transporting people from point a to point b. They were a means of showcasing the landscape. In the United States these roads that were designed to exhibit the landscape were called Parkways. Renowned landscape architect, Frederick Law Olmstead when designing Prospect Park in Brooklyn, New York in 1868, coined the term. The design was based on a means of moving from one park to another or a way through the park. It was through these roads that many tourists learned to appreciate nature and the regional landscape. Seeing and recognizing particular landscapes through the windshield became an important part of the tourism industry in America. (Parsons et al,1998)

The Bronx River Parkway is a great example of how the design of parkways approached utilitarian infrastructural design as a means to strengthen perceptions of regional character. The main intention of the Bronx River Parkway was to transform a polluted river valley into a linear park. The landscape architect, Hermann Merkel, had the intention to include recreational facilities along the route and frame attractive scenery. The objectives were to preserve the unique character of the road, create a balance between utility and amenity, express sensitivity to the natural environment and optimise visual connections. One of the ways visual connectivity was enhanced was the removal of roadside elements which obstructed important views. Initiatives were taken to remove invasive planting along the river edge and promote the growth of local species.

Although the R21 regional route may not offer all the opportunities as the Bronx River Parkway did, there are principles that one might learn from the design of the parkway.

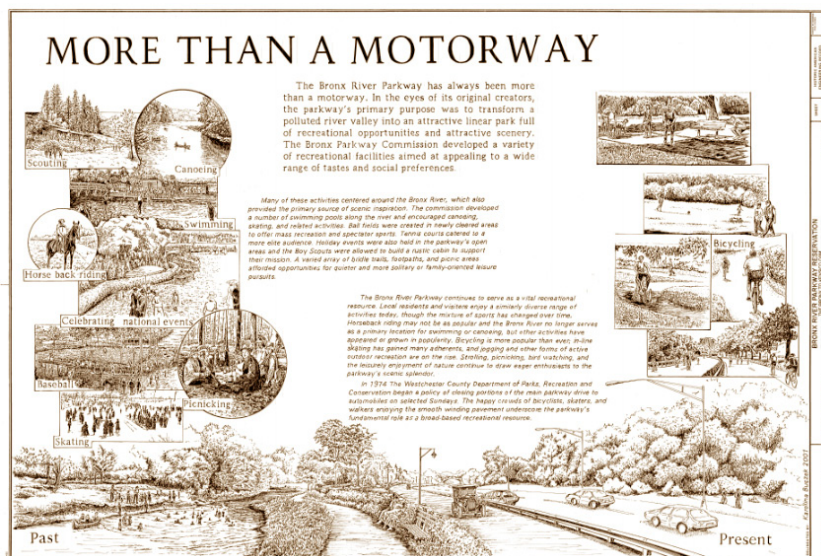
1.1.2 America's scenic byways program

The National Scenic Byways Program is part of the U.S. Department of Transportation, Federal Highway Administration. The program is a collaborative effort established to help recognize, preserve and enhance selected roads throughout the United States. These road are recognised as possessing archeological, cultural, historic, natural, recreational and

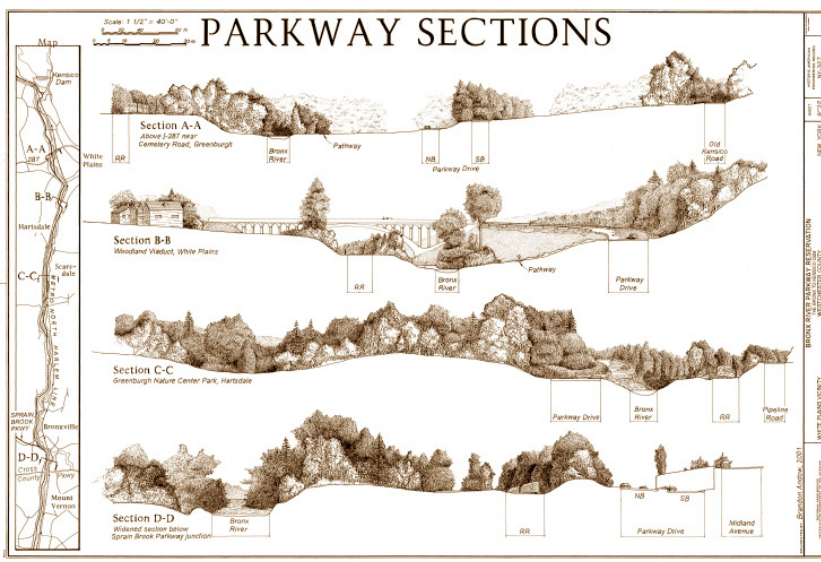
scenic qualities.

In South Africa there are a variety of tourism and travel routes within the different provinces. These include the Garden route in the Western Cape, the Friendly Route in the Eastern Cape, The Midland Meander in KwaZulu Natal and the Panorama route in Mpumalanga, just to mention a few.

Much of the discipline's attention has been focused on these scenic routes. The irony is that most citizens spend most of their time on urban freeways as opposed to these leisure roadways. None or little effort has been made to improving the quality of urban freeways.



Figure_2.2. The Bronx River Parkway initiative(Wikimedia,2014)



Figure_2.3. The Bronx River Parkway sections (Wikimedia,2014)

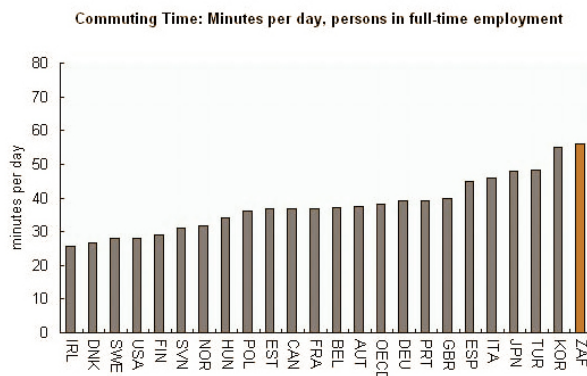
1.2 Urban freeways and the daily commute

In recent years there has been a shift from pleasure driving to task orientated driving. Commuting has been proved to have negative effects on lifestyle. Aside from the driving task, research has discovered that commuting is a stressful activity. It has negative effects concerned with health and quality of life for those who drive to work, it has reduced the time people spend with family, on physical exercise, leisure activities and sleep. (Novaco et al, 1979)

Human behaviour can be influenced by scenic quality of environments through which they drive. Research studies have been conducted to see how exposure to roadside environments has an effect on stress levels. Results concluded that natural-setting road side environments have an effect on reduced stress levels as opposed to artefact related road side environments, which revealed higher blood stress levels. The study explained that natural environments discussed weren't completely natural but consisted of wilderness like settings including water, trees, and planting in comparison with artefact related settings which include billboards, warehouses and industrial development (Parsons et al, 1998:116). This literature presents the need for designers to engage with the roadside environments together with sustainable development practices along the freeway in order to limit the exposure to the artefact related environments and preserve and instil road side development that allows for exposure to natural like settings suggested in the study (Parsons et al, 1979).

The problem with most of our commuter routes is that the roadsides are extremely overpopulated with development and are artefact dominant which have proven to have negative impacts on road users.

According to an article published in the New York times in 2014, (Rampell, 2014) South Africans have the highest commuting average of 56 minutes per day. Of which 64,9% of travel to work by taxi, bus or car, making use of



Figure_2.4. Global commuting times (Rampell, 2014)

the country's roads. (National Household Survey, 2013)

1.2.1. Gauteng Commuter Routes: a lack of regionalism

Termed in the Landscape Urbanism Reader (Waldheim,2006:227) Collisive sites are places where transaction happens. These locations include airports, train stations, harbours and freeway intersections. These sites are catalysts for exchange and activity. Mobility routes serve as catalysts for development. It is no wonder that typical intersections of the highway between Pretoria and Johannesburg are completely developed by retail and commercial industries as the freeway off ramps offer optimal opportunity for access. These freeway off ramps are the ideal places for shopping malls and business districts. The problem with modern planning is that this kind of development leads to a loss of exposure to the regional landscape.

The portion of the M1 highway between Pretoria and Johannesburg is the country's most used commuter route, with 300 000 vehicles travelling on the route each week day. According to TomTom South Africans are spending an average of 3.5 days a year stuck in traffic.(News24, 2013)

Another point is that contemporary lifestyles and have left little room for exposure to the outdoors. But the freeway experience presents an opportunity for visual exposure of ones environment. The way in which these outdoor environments are addressed becomes vital in impacting the daily lives of commuters on the road. (Kaplan,1995,174)

The drive to work is thus an ideal opportunity for one to have visual exposure to nature and is the responsibility of the design professionals to address this reality. Donald Apple yard has proposed that the urban freeway becomes and educational tool where landmarks, history, cultural and ecological processes can be of visual interest (Appleyard,1964). A vital component of this prospect can be achieved through strengthening variation, change and threshold from one environment to another. Crucial points of identity along the freeway can help with orientation. Other research has shown that during freeway driving, drowsiness and hypo-vigilance commonly transpire, which have severe consequences in resulting road accidents. Investigations were conducted to assess the roadside visual stimulation and how it relates to drivers alertness. Results revealed that repetitive and monotonous roadside visual elements concluded in greater fatigue in comparison with roadside environments with strong visual elements that disrupt monotony. Fatigue is one of the causes of many road accidents. If monotony is to be avoided during driving, then there is opportunity to for design to create visual interest of roadside environments.

The challenge for the design disciplines is acknowledging the need for development along freeway corridors while learning how to manage the balance between legitimate development and conserving vital open space along freeway corridors. Landscape design can play a critical role in recognising the road reserves as potential connector spaces which could become the parks of the future. This can be achieved if we consider the road reserve as a linear ecological habitat. Another responsibility of the discipline is to ensure that road environments are protected against monotonous industrial and commercial development. This seems to be the trend in our cities, which has impacts on our mental health and our relationship to our regional whereabouts.

There are regulatory bodies in place which serve as guideline for development along freeways. The South African Manual for Outdoor Advertising control (SAMOAC) is a guideline document for assessing advertising control measures in South Africa. The manual outlines three landscape types namely, natural, rural and urban. There is a greater sensitive approach to signage which can be erected within the natural areas as opposed to the urban areas. This manual gives an indication of the approach to land use planning. Landscape type is used to give an indication of basic landscape sensitivity and forms a broad framework for spatial classification. (SAMOAC,1999)

Other guidelines for development not only related to the freeway include Environmental Impact Assessments and Visual Impact Assessments which measure the potential affect of a development on a certain piece of land in terms of ecology, culture, land quality and scenic quality. The guides all adhere to a similar approaches to development, with a greater sensitivity toward natural environments.

Along the R21 freeway there is evidence of illegal billboards in sensitive areas and rapid encroachment of development in highly valuable agricultural land. The concern is that regulations are not being enforced regarding development within the Gauteng Highveld, with specific reference to the R21 freeway environment. The author questions this unsustainable practice as a possible result of lack of appreciation for the regional landscape. The author suggest that only once a regional landscape is appreciated, then will the developmental laws and guides to protect the land may be effective.

1.3 Beauty and the barren: perceptions and the disappearing Gauteng Highveld

Why is it that some provincial landscapes have been appreciated over others? As suggested in the introductory chapter some landscapes

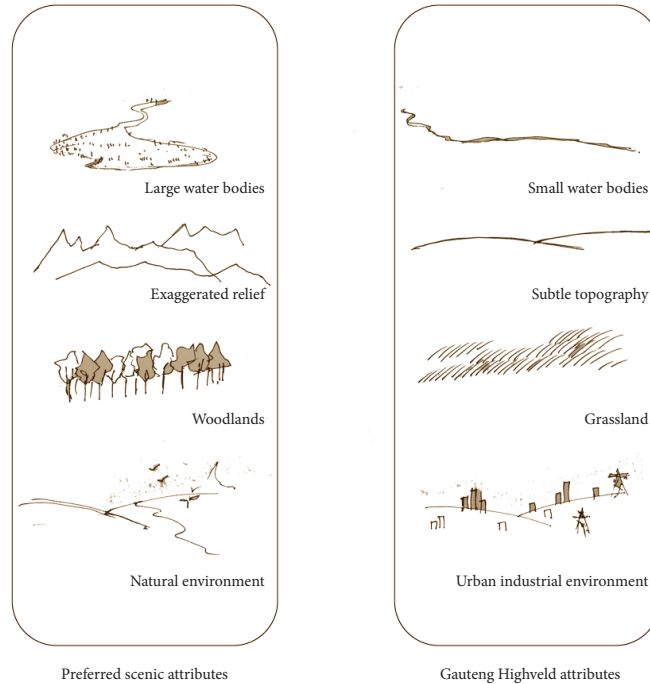
are overlooked because of their lack of drama and thus are not valued or considered aesthetically pleasing. Other reasons for lack of appreciation may be because of lack of representation and lack of awareness. "Without knowledge of one's place, without the faithfulness to one's place, it is inevitable that the place will be used carelessly and eventually destroyed" (Kellert et al, 2008). "Gauteng is the most densely populated province in South Africa. Its remaining natural areas are constantly under threat from urban development and the associated impacts" (Bredenkamp, Brown, 2006). This unsustainable development BrendenKamp talks of could be because of insufficient recognition of the Gauteng Highveld as valuable.

A series of review papers (Kaplan, 2008) found four physical characteristics to be strongly related to visual preference. Surface water, topography, woodlands and land use. A strong visual preference is found towards higher presence of surface water bodies, such as dams, rivers and wetlands. The more relief the more favourable the environment, such a mountain scenery. Woodland areas are desired as opposed to scenery that is absent of trees and natural environments or seemingly natural are preferred over those that are artefact related.

This helps one understand why the Gauteng Highveld landscape may be under appreciated. The Gauteng Highveld's physical character is contrary to preferred scenic environments, as it is characterised by small streams, low profile topography constituting of subtle hills and valleys. Grasses dominate the vegetation structure with little presence of trees. And land use is governed by urban or industrial development.

Other characteristics of the region include wide open maize fields, which are a representation of the unseen fertile soils. Large expanse of shifting sky dominates the flat grass plains. The deep red earth is powerful in its own right. The seasonal blackened fields promote growth displaying an intriguing contrast between the burnt veld and new germination. And the intense thundershowers, which light up the summer skies are all attributes of regional landscape which contribute to the authors appreciation of the Gauteng Highveld. Even the endless of construction suggests something of the growing economy and the endless ribbons of asphalt are what make the land a landscape for landscape includes cultural phenomenon too."Landscape is an area as perceived by people, whose character is the result of action and interaction of natural and/or human factors." (Council of Europe, 2000).

Similar challenges are found in America. Hough (Hough, 1990:25) writes about the prairie landscape which can be perceived as having little or



Figure_2.5. Comparison between preferred visual scenery and the Gauteng Highveld scenery (Author,2015)

no value. But he illustrates how the prairies' diverse weather offers magnificent momentary images of the landscape and how the sky is a feature of the landscape in itself. Neil Evernden in *Beauty and Nothingness: Prairie as failed Resource*, (Evernden1983:3) accounts for this lack of appreciation for the prairies as a result of the absence of things within the landscape. How can an environment be beautiful when there is nothing there to possess aesthetic interest?

But in relatively recent years the highveld has been captured within the discipline of landscape design, but only some aspects of the Highveld have been romanticized such as the grassy plains(Forum Homini). But what about the other aspects that make up the regional landscape?

A minority of photographers and painters who have appreciated the authentic beauty of the region.(Figure_2.7 and Figure _2.8)

However, our representations methods may need to extend further than the art gallery and the picture book. The author again suggests that if our reference for landscape is most often in the automobile, does the freeway not present the ideal opportunity for representation? This may be the means to reach a wider scope of individuals and ultimately challenge how the general public feels about the Gauteng Highveld.

The representation of the landscape experienced through the automobile may change perceptions about what one considers valuable which could

influence the way we think about the landscape.



Figure 2.6. Pierneef, *Approaching storm Highveld* (mutualart,2014)



Figure 2.7. William Kentridge *Highveld Landscape* (mutualart,2014)

An illustration by the author called *Beauty and the Barren* symbolises our preconceived ideas about beauty and aims to challenge our perceptions of aesthetics.





Part 2

A suitable approach to enhancing perception of regional identity

Figure_2.8. Figure depicting our preconceived ideas on aesthetics (Author,2015)

2.1 Imageability: recognising the environment

In his literature, *Image of the City*, Kevin Lynch categorizes how a city can be divided into certain components. These components consist of pathways, edges, districts, nodes and landmarks. The theory explains that by organising, enhancing and defining these components one can strengthen the perceived character of a place, or what Lynch calls Imageability. The ease in which one can recognize the patterns and meanings of their environment, the more pleasure and utility they will extract from it (Lynch,1960). In his later literature, *The View from the Road*, Lynch refers to his earlier theory of Imageability and how it can be used in road design to enhance ones experience on the freeway.

Pathways (in this case the Freeway) are the mobility routes along which users are intended to move. These routes are often principle ordering devices with powerful directional qualities and it is along them that the other environmental elements are arranged, related and experienced. (Lynch,1960)

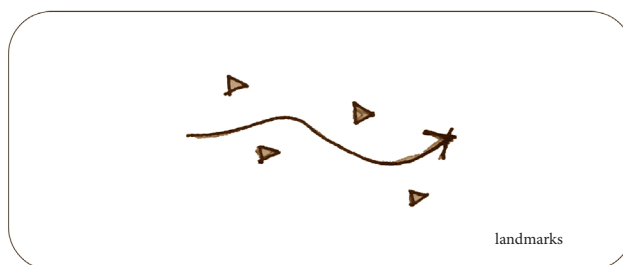
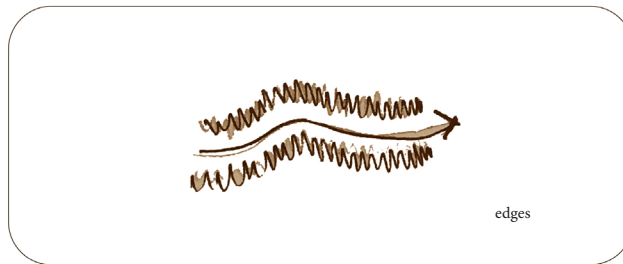
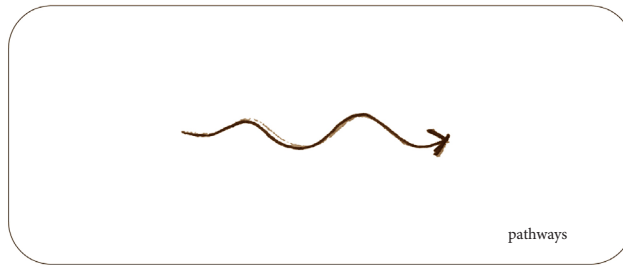
Edges are the linear routes not considered to be paths. They are boundaries that may be geographical, topographical or man-made. The edges contribute to the perceived depth of the corridor and hold the capacity to connect or fragment a route.

Nodes are the focus areas of activity. They are spaces that users may enter into and may be primary junctions, off ramps or intersections.

Districts are the parts that divide the magnitude of a region so that it may be legible. They are organised by similar character and become important reference points for the users of the road. Users may see themselves within a district or moving towards a district.

Landmarks are reference points within the landscape. They are distinguished by a component which is chosen to stand out within a given environment. Often considered important for recollection, they are ordering, identifying and structuring elements.

The approach to the study aims to enhance these components of Imageability. By using the ordering elements of Lynch's theory the author hopes to strengthen perceived character and meaning on the route. Theories involved with place (such as Lynch's) stress the importance of spatial experience and perception which is often lacking in modern planning of freeways.



Figure_2.9. Lynch's principles on how to read the landscape (Author,2015)

2.2 Space-motion: tools for comfort

Donald Appleyard in, *The View From the Road* (Apple yard, 1964) compiled a series of observations and tools in order to improve ones experience on the freeway.

Some environments can be exceptionally pleasant at certain speeds and most uneasy at others. Monumental scale as opposed to the desired human scale and loss of detail in contrary to attention to detail are all considerations for designing for the automobile user. The dissertation outlines a few space motion principles developed by Appleyard.

Turning motion comfort

The turning motion can be a comfortable experience when assisted by objects which appear to be pushing the road in a certain direction. Contrary, objects placed on the inside of a bend form a pivot around which the road appears to turns.

Animation of objects in the landscape

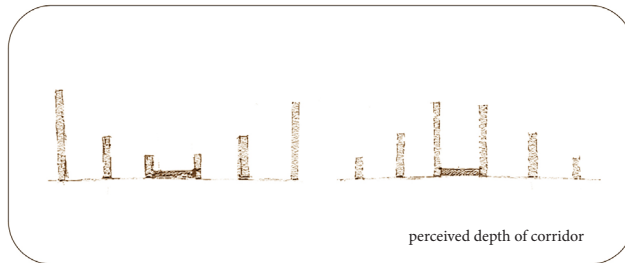
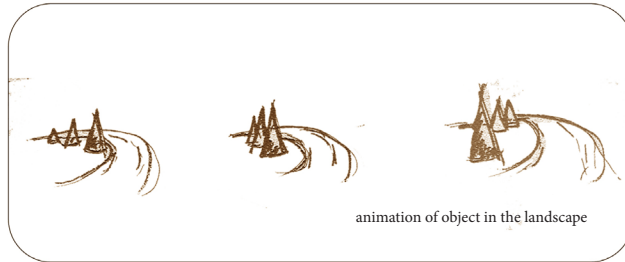
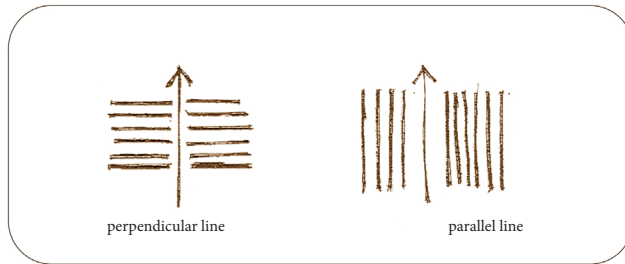
Speed and displacement creates the illusion that objects are moving in the landscape and the driver is stationary.

Rhythm

Rhythmic lines can create an illusion of increased or decreased speed, lines which lie perpendicular to the road create a perception of decrease speed as they break the direction of movement, while lines which run parallel to the road create a feeling of increases speed.

Perceived depth of corridor

Vertical objects close to the road makes one appear to be moving much faster than reality. 60km/h on a narrow tree lined road may feel the same as 120km/h on a wider open road.



Figure_2.10. Space motion principles
(Author,2015)