

**T.C.
ISTANBUL OKAN UNIVERSITY
INSTITUTE OF GRADUATE SCIENCES**

**THESIS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
IN ARCHITECTURE**

Aytek ALKAYA

**WALKING IN THE HIGHWAY:
EVERYDAY URBAN MOBILITIES AND
IMPOSED PEDESTRIAN EXPERIENCES IN UZUNÇAYIR**

**ADVISOR
Prof. Dr. Nur ESİN**

ISTANBUL, June 2022

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A Dissertation

by

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LIST OF CONTENTS

PAGE NUMBER:

LIST OF CONTENTS	I
ABSTRACT	III
ÖZET	IV
LIST OF FIGURES	V
1. INTRODUCTION	1
1.1. RESEARCH INTEREST	1
1.2. CONTEXT OF THE RESEARCH	1
1.3. RESEARCH QUESTION	2
1.4. THE AIM AND STRUCTURE OF THE THESIS	3
1.5. BACKGROUND OF THE STUDY	6
1.6. METHODOLOGY	7
1.6.1. Approach to Research	7
1.6.2. Theoretical Framework: Mobilities Research.....	7
1.7. METHODS	10
1.7.1. Representation of Space	11
1.7.2. Representation of Movement	13
1.7.3. Uzunçayır Walks	17
2. THE MOBILE CITY.....	30
2.1. THE CITY AND MEANING	31
2.2. URBANISATION	33
2.2.1. Compact Development.....	35
2.2.2. Urban Sprawl	37
2.2.3. Compact and Sprawled Plans.....	42
2.3. ISTANBUL'S TRANSPORTATION BASED URBANISATION	44
3. MOBILITY SPACES IN THE CITY	49
3.1. THOROUGHFARE AND ROAD.....	50

3.2. THOROUGHFARE TYPES	51
3.2.1. The Street	52
3.2.2. The Highway	55
3.2.3. Highways and Streets	58
3.3. MOBILITY SPACES IN ISTANBUL	59
3.3.1. Highways in Istanbul	63
3.3.2. D100	65
3.4. ARTERIALISATION OF D100	68
4. MOVING IN THE CITY	74
4.1. MOBILITY	75
4.2. RHYTHM	77
4.3. POLITICS OF MOBILITY	82
4.4. MODES AND CONDUITS OF URBAN MOBILITY	86
4.4.1. The Automobile	88
4.4.2. The Pedestrian	93
4.5. IMPOSED PRACTICES	97
4.5.1. Intersections and Structures	98
4.5.2. Pedestrians Separation Structures	102
5. MOBILE PLACE-MAKING	110
5.1. SPACE, PLACE AND MOBILE PLACE-MAKING	110
5.2. WALKING	115
5.3. BODILY EXPERIENCES	116
5.3.1. The Physical Body	118
5.3.2. The Psychic Body	122
5.4. NON-PLACE	127
5.5. KINAESTHETIC EXPERIENCES	131
6. CONCLUSION	137
BIBLIOGRAPHY	141
SOURCES OF FIGURES	156
CURRICULUM VITAE	161

ABSTRACT

People make meaningful connections to places through embodied experiences. Walking is a mobile practice that would produce unique places in the city. The combination of these places constructs the layers of the system, called the city. Automobile-centric sprawl formed Istanbul's later developed morphologies. D100, once an inter-city motorway, was centralised and arterialised on the Anatolian side through the urban growth and integration of pedestrian mobility into the highway. As modernist sprawl neglects walking, ad-hoc pedestrian conduits were inserted into the large-scaled, speed-bearing highway to afford walking.

The practice of walking in pedestrian separation structures of Uzunçayır is discussed through the politics of mobility, rhythms, the dichotomy of pedestrian and automobile, and modernist city planning with the ways of Mobilities Research and architectural analyses. The pedestrian separation structures regulate and manipulate the walking practices in Uzunçayır in the name of seamless access and security. They impose a channelled and segregated mobility. Walking becomes a pure corporeal transportation mode, placing pedestrians as mobile minorities who are forced to perform it through the complex structures of mobile rhythms. Walking in these pedestrian separation structures limits the meaningful relationship of the body and space and disrupts the embodied experience. The body experiences the space through sensory and emotive perceptions. The lack of stimulation and social encounters in the mobility spaces of Uzunçayır, prevent making connections through haptic senses and mobile place-making which are essential in creating embodied and meaningful experiences. The spaces created by the infrastructure enforce bodies to have a pre-determined experience rather than offering possibilities for people to have unique and myriad experiences.

Keywords: Mobile Place-Making, Everyday Urban Mobility, Urban Politics, Urban Highway, Pedestrian, D100

ÖZET

İnsanlar mekanlarla anlamlı ilişkileri somutlaşmış deneyimler aracılığıyla kurarlar. Bir mobil pratik olan yürüme, şehirde özgün mekanlar üretir. Bu özgün mekanlar şehir sisteminin katmanlarını oluşturur. İstanbul'un sonradan gelişen morfolojileri otomobil merkezli yayılma ile şekillenmiştir. Şehirlerarası otoyol olan D100 kentsel büyüme ve yaya entegrasyonu sebebiyle Anadolu Yakası'nda merkezileşmiş ve arterleşmiştir. Yaya hatları, modernist yayılma yürüme pratiğini ihmal ettiği için, büyük ölçekli ve hız üreticisi olan devlet karayoluna yürümeyi destekleyebilmesi için anlık müdahalelerle eklenebilmiştir.

Uzunçayır'daki alt/üst geçit ve noktasal katlı yaya sistemleri, mobilitenin politikası, ritm, yaya ve otomobil ikilemi, modernist kent planlama konuları üzerinden, Mobilite Araştırmaları ve mimari analizler aracılığıyla tartışılmaktadır. Kesintisiz erişim ve güvenlik adına inşa edilen yaya ayırma strüktürleri, Uzunçayır'da yaya pratiklerini düzenlemekte ve manipüle etmektedir. Bu strüktürler kanallaşmış ve ayrımcı bir mobilite pratiği dayatmaktadırlar. Yürümek saf bir ulaşım yöntemine dönüşürken, kompleks ritmlerin arasında karmaşık strüktürler yardımıyla yürümeye zorlanan yaya ise mobil azınlığa dönüşmektedir. Yaya ayırma strüktürleri içinde yürümek, beden-mekan arasındaki anlamı ilişkiyi sınırlandırmakta ve somutlaşmış deneyimi aksatmaktadır. Beden, mekanı duyuşsal ve hissi yollarla deneyimlemektedir. Uzunçayır'ın mobilite mekanlarında uyarıcı ve sosyal karşılaşmaların ender olması, dokunsal duyu ve mobil yer-kurma ihtimalini azaltarak, insanların mekanları somutlaşmış ve anlamlı bir şekilde deneyimlemesini engellemektedir. Yaya ayırma strüktürleri ile tanımlanmış bu mobilite mekanları, insanların özgün ve çeşitli deneyimler yaşamasına olanak sunmak yerine, bedenleri önceden kararlaştırılmış mekansal deneyimlere zorlamaktadır.

Anahtar Kelimeler: Mobil Mekan-Kurma, Gündelik Kentsel Mobilite, Kent Politikası, Kentsel Karayolu, Yaya, D100

LIST OF FIGURES

PAGE NUMBER:

Figure 1.1: Subjects related to Planning and Engineering.....	5
Figure 1.2: Subjects related to Mobilities and Social Studies	5
Figure 1.3: Chronophotography, Grid.....	13
Figure 1.4: Chronophotography, Motion	14
Figure 1.5: The Routes of Uzunçayır Walks.....	17
Figure 1.6: Uzunçayır Walks, Walk 1	18
Figure 1.7: Uzunçayır Walks, Walk 2	19
Figure 1.8: Uzunçayır Walks, Walk 3	20
Figure 1.9: Uzunçayır Walks, Walk 4.1	21
Figure 1.10: Uzunçayır Walks, Walk 4.2	22
Figure 1.11: Uzunçayır Walks, Walk 5	24
Figure 1.12: Uzunçayır Walks, Walk 6	26
Figure 1.13: Uzunçayır Walks, Walk 7	27
Figure 1.14: Uzunçayır Walks, Walk 8	29
Figure 2.1: Layers of Urbanisation in Istanbul between 1946-2022	45
Figure 3.1: Components of Thoroughfare	50
Figure 3.2: Street Types	53
Figure 3.3.: Highway Types.....	55
Figure 3.4: Street and Highway Networks in Istanbul.....	60
Figure 3.5: Thoroughfare Hierarchy	62
Figure 3.6: Morphology of Intersecting Thoroughfares	62
Figure 3.7: Highways in Istanbul.....	64
Figure 3.8: D100 the Artery	66
Figure 3.9: Diagrammatic Map of D100.....	67
Figure 3.10: Intersection of D100, the Highway and D100, the Artery.....	69
Figure 3.11: Uzunçayır Grade Separated Junction	70
Figure 3.12: Arterialisation of Uzunçayır Junction.....	71

Figure 4.1: Movement and Mobility	76
Figure 4.2: Rhythm of Motions in Uzunçayır.....	79
Figure 4.3: Intersection of Mobility Conduits	86
Figure 4.4: Public Transportation Modes in Uzunçayır.....	87
Figure 4.5: Intersection of Pedestrian and Automobile	98
Figure 4.6: A Gift from IMM.....	101
Figure 4.7: Pedestrian Separation Structures in Uzunçayır Junction.....	103
Figure 4.8: The Path.....	105
Figure 4.9: Overpass between the Metro Entrance and the University	106
Figure 4.10: Dangerous Shortcuts of Pedestrians	107
Figure 5.1: Uzunçayır Walk 3, 1B.....	112
Figure 5.2: Uzunçayır Walk 7, 4B.....	113
Figure 5.3: Uzunçayır Walk 3, 2B	125
Figure 5.4: Place, Portal, Path.....	127
Figure 5.5: Uzunçayır Walk 1, 3A	128
Figure 5.6: Uzunçayır Walk 5, 3A	129
Figure 5.7: Uzunçayır Walk 1, 2A	130
Figure 5.8: Uzunçayır Walk 5, 5B	133
Figure 5.9: Uzunçayır Walk 6, 1B	134
Figure 5.10: Uzunçayır Walk 4.2, 4A	135

1. INTRODUCTION

1.1. RESEARCH INTEREST

The subject of this thesis is based on the restless and anxious feelings I have when I walk in Uzunçayır. This personal discomfort became a research interest due to the educated hunch and academic desire to understand. Previous works I have produced related to the purpose of the thesis helped construct a comprehensive and holistic approach. The first-ever article I have written was interested in walkable street space. I had the opportunity to discuss qualitative, quantitative and design-based methodologies during my Master's studies that were concluded with the thesis about pedestrian experiences during walks between walls of gated communities, called “Walking through Walls: Public Places vs. Gated Communities in Ataşehir”. The subjects I have worked on during my Doctoral studies include Morphology, Street Design Qualities, Perception helped base the thesis on more in-depth and informed content.

The initial curiosity about walking in the highway spaces was searched revolving around the keywords of walking, highway, D100 and public space. Further research about these keywords revealed more matters, existing discussions and approaches from a myriad of disciplines which are discussed in the following sections.

1.2. CONTEXT OF THE RESEARCH

The issues, terms and matters uncovered by the research involve urbanisation, urban sprawl, compact city, modernism, morphology, thoroughfare, street, artery, highway, road, junction, intersection, automobile, public transport, pedestrian separation infrastructures, rhythm, social space, driving, speed, mobility injustice, power, constraints, friction, auto-mobility, meaning, mobile sense-making, walkability, shared space, desire line, body, proprioception, affect. These concepts

are benefited in the research to expand the research, form the groundwork and configure the thesis.

Research revealed that these matters are studied by different academic fields, including urban planning, transport engineering, mobilities research and social studies such as human geography, communications, sociology, psychology, anthropology etc., leading to a conflict and a gap in the subject matter. Planning and engineering are ‘making disciplines’ that form the material world, and mobilities research and other social study disciplines act as the ‘critical disciplines’. This thesis attempts to mediate the dichotomy between these approaches through architectural knowledge, intending to expand the architecture’s horizons and have an architectural say in the subject matter by also using the disagreement to corroborate the findings.

1.3. RESEARCH QUESTION

The thesis fundamentally aims to understand and document pedestrian experiences while walking in Uzunçayır. In order to do so, the questions below are attempted to be answered.

Research Question:

-How do automobile-related politics on urban mobility disrupt the embodied experience of pedestrians?

Sub-Research Questions:

- How do people produce places and make meaningful spatial connections?
- How do modernist sprawl and the automobile transform cities?
- How does the material architecture impose constraints on mobile actors and position pedestrians as mobile minorities?
- In what ways do the pedestrian separation structures disrupt the mobile place-making that creates the relationship between people and the city?

1.4. THE AIM AND STRUCTURE OF THE THESIS

The thesis aims to examine the pedestrian experience in highway spaces. Walking is approached as a mandatory transportation mode. It is the most fundamental way of moving around in the city, rather than being a recreative activity or a research method. Experience is studied in terms of body-space relationship, structured around affect and proprioception as ways of psychic and physical body's connection to space. The highway is discussed in the context of urbanisation process in order to illustrate how they are first emerged. The highway is also researched in the scope of road types and hierarchy in comparison to other thoroughfare types.

The issue has two main components, which are walking and the highways. As both components are related to movements in the city, urban mobility was adopted as the primary academic knowledge-making rationale in order to create a common ground where the two matters can meet.

The discussions about the highway are conducted at different scales. As highways bring places closer and alter how cities are constructed by providing faster access, it is discussed on the city scale. The highways influence surrounding urban formations; therefore it is studied on the urban scale. The structures highways contain for regulating the traffic and connecting highways to the surrounding environments are built and discussed on the building scale.

As the mentioned studies about the highways structure this thesis, the literature doesn't include any research focused on the highways on the body scale. Highways became undeniable parts of urban morphologies and adjoined with other thoroughfares; it accommodates pedestrians with structures inserted for bodily transportation. The pedestrian separation structures built for corporeal movement require discussions on body scale. This thesis aims to contribute to the literature on architecture, urban design, and other disciplines discussing highways, with research conducted focusing on the highways on the body scale.

Walking is related to the individual persons and humane relationships as a bodily performance. Therefore the bodily discussions about highways are focused on experience, perception, place-making, etc., with the support of academic rationale provided by the disciplines of social studies.

The discussions about the highway and the walking connected on different scales and through different disciplines are assembled in layers. There are three layers of discussions aimed to be conducted in the thesis. The first layer aims to unravel the existing situation in D100, which is the built geography and materialised form. The reason for the formation of the highway is discussed through urbanisation and modernist planning concerning the automobile, and how it influences the surrounding environment is investigated through urban planning and urban design disciplines. How the highway is built and identified among other thoroughfares are discussed in the second layer, through the transport engineering and the administrative authorities in charge of them, the General Directorate of Highways and Istanbul Metropolitan Municipality.

The third layer aims to unveil the hidden dimensions by investigating and questioning material space and urbanism in the context of urban politics with the support of mobilities research. The power communicates and imposes the intentions through the built form and regulates and controls human activities and everyday urban mobility. The modern city is formed to prioritise the automobile as the dominant mobility mode. The hierarchal power relationship between the automobile and pedestrians places the practice of walking as the neglected and vulnerable mobility mode, which places pedestrians as mobile minorities.

The body-space relations and how people make a meaningful connection to the city are explained in the third layer through the findings of social studies. Physical and cognitive embodiment, bodily experiences, creating unique journeys by walking and how places are produced socially are discussed and adopted to demonstrate the experience of walking in Uzunçayır.

The matters and discussions brought by planning and transport, mapped in Figure 1.1, are adopted to analyse the existing built environment. As these issues are responsible for the creation of Uzunçayır, they construct the basis of the thesis.

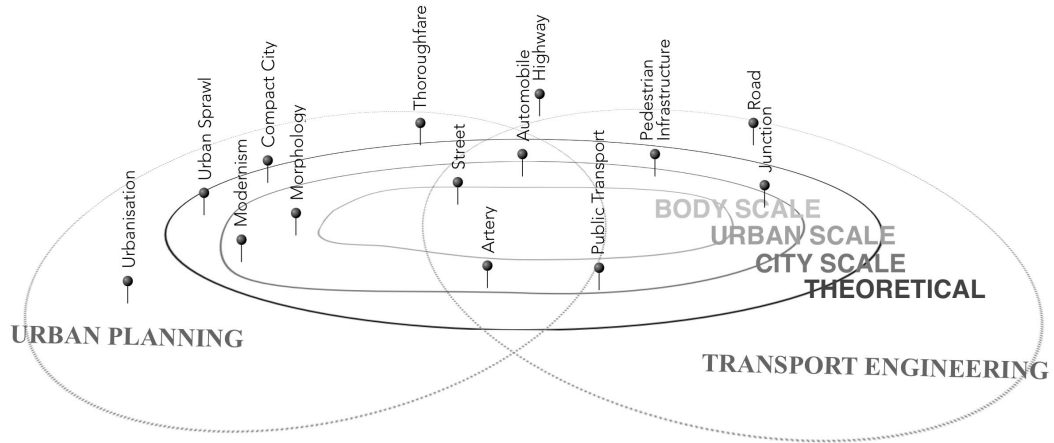


Figure 1.1: Subjects related to Planning and Engineering
Aytek Alkaya, 2022

The matters and discussions developed my mobilities, and other social study disciplines contribute to the critical approaches and understandings. These contents mapped in Figure 1.2 are used to illustrate invisible reasons and consequences of the built form.

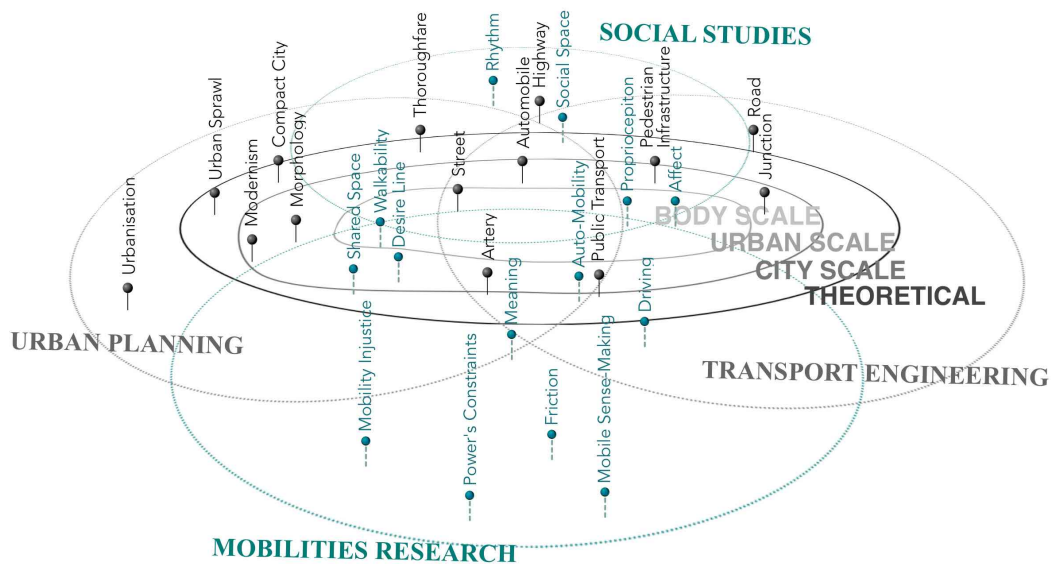


Figure 1.2: Subjects related to Mobilities and Social Studies
Aytek Alkaya, 2022

In addition to the research about the subject matter, the thesis aims to contribute to the cumulative academic knowledge produced by architecture and mobilities research by developing an understanding between planning, engineering, and social studies.

1.5. BACKGROUND OF THE STUDY

Urbanisation in Istanbul has stages producing different morphologies which could be understood through the influences of urban movements. Older urban centres are formed, displaying features of high-density morphologies. The city is compact and contains mixed land use. The street is the main thoroughfare as walking is the primary movement mode.

The urban morphology produced during the radical expansion of Istanbul in the 1970s indicates an urban pattern with further proximities between built forms caused by zoning. The opportunity for distributing certain urban districts over significant distances could be explained by introducing the automobile into daily life. The thoroughfare started to enlarge during this era, streets became boulevards, and provincial roads became urbanised.

The morphology formed after the 2000s contains even furthered urban areas, establishing sub-urbanisation and making the use of the automobile an inevitable necessity. Motorways and highways become crucial components of thoroughfare for movement in the city.

As a result, Istanbul encompasses a compilation of urban patterns, urbanisation types and urban movement modes. The thoroughfare adapts to these features and gets transformed accordingly. It is observed that the institutionally established definitions do not correspond to how the city operates.

E5, which was built as a motorway, was turned into D100, and its section in Istanbul is identified as a state highway. Due to further urban expansion, D100 is

employed by official authorities as an artery on the Anatolian Side of Istanbul for administrative purposes, and Uzunçayır is occupied as an urban centre by daily mobilities because of attractions and public transportation.

1.6. METHODOLOGY

1.6.1. Approach to Research

The research is conducted mainly with qualitative and design research approaches. The in-situ data collected by ethnographic methods are transformed into intelligible knowledge with support from the literature. The analyses and the location are approached as information sources rather than opportunities to demonstrate the data as a case study.

1.6.2. Theoretical Framework: Mobilities Research

Sociologists Mimi Sheller and John Urry suggested in their papers in 2006¹ and again in 2016² that the studies which involve the issues of movement have taken a ‘mobility turn’ by transcending the dichotomy between transport research and social research. Social relations are included in the studies of travel, and transport is connected with complex patterns of scale experience. Mimi Sheller and John Urry introduced these transformations in social studies as the ‘new mobilities paradigm’. It was declared in their paper that social sciences had ignored the importance of systematic movements of people and failed to examine how spatialities of social life are integrated with travel which was seen as a set of technologies.

The ‘new mobilities paradigm’ suggests a set of questions, theories and methodologies about the issues of connectivity zones, centrality, empowerment, disconnection, social exclusion, rights to travel, material and institutional infrastructures in the scope of the movements of asylum seekers, international

¹ Sheller, Mimi, and John Urry, "The New Mobilities Paradigm", *Environment And Planning A: Economy And Space*, Vol. 38, No. 2, 2006, pp. 207-226.

² Sheller, Mimi, and John Urry, "Mobilizing The New Mobilities Paradigm", *Applied Mobilities*, Vol. 1, No. 1, 2016, pp. 10-25.

students, terrorists, holidaymakers, business people, refugees, backpackers, commuters, prostitutes and all other moving subjects with the approaches of qualitative-quantitative, visual and experimental methods.

Mobilities research involves the methods of observing directly or digitally, mobile ethnographies, walking with people, following things, mobile videography, cyber-research, imaginative travel, memory performance, and places of in-between-ness.

The contributions to the mobilities paradigm from the fields of sociology, anthropology, cultural studies, geography, migration studies, science and technology studies, tourism, and transport studies will form and stabilise the new paradigm.

Tim Cresswell, who has been studying mobilities as a human geographer since 1986, states that mobility emerged as a research agenda in the 1990s. Tim Cresswell introduces moving our hand, walking, dancing, going on holiday, marching, running away, and immigration as forms of mobility and places mobility in a central position in discussions about the body, society and culture in his book *On the Move*³. He states that mobility is a fundamental geographical facet of existence and plays a vital role in theorising the contemporary city as social theory stands between sedentarism and nomadism.

Ole B. Jensen, an urban scholar with a background in political science, attempts to connect mobilities to a design perspective to discuss the combination of urban design and mobilities critically.⁴ Ole B. Jensen criticises the positivistic and quantitative transportation planning that had been an influential research agenda since the 1960s for having a simplified understating by focusing on isolated individuals and neglecting the mobile subjects being a cluster that interact with each other and may affect each other's capacity to be mobile. Also, the transport planning works on economically modelled passengers; it concentrates on the before and after

³ Cresswell, Tim, *On The Move*, Routledge: Taylor and Francis, New York, 2006.

⁴ Jensen, Ole B., "Urban Design For Mobilities – Towards Material Pragmatism", *Urban Development Issues*, Vol. 56, No. 4, 2018, pp. 5-11.

of the journey, but not what happens on the route. Ole B. Jensen presents 'so-called mobilities turn' as an exact response to social and cultural blind spots of transport studies by mobilities turn being devoted to practical, situated and everyday mobilities. The researcher states that mobilities suggest a much more concrete and real-life perspective than transport research by its situational understanding of the material space and mobile subjects' social interactions and embodied performances.

The discussions about mobilities are referred to as 'mobilities turn', 'mobilities paradigm', 'mobilities research', 'new mobilities field', and 'mobilities research cluster' by Mimi Sheller and John Urry. Tim Cresswell introduces the studies as 'cross-disciplinary research agenda', 'object of knowledge'. Tim Cresswell also calls mobilities a 'theory' in one of his lectures⁵. Ole B. Jensen identifies mobilities as a 'cross-disciplinary approach of mobilities design', 'mobilities perspective', and 'mobilities perception'.

Mobility, as mentioned above, is the movement when the context is added. The term mobility indicates the ability to be mobile, which refers to the involvement of an authority or a power. Involvement of power in movements raises questions about free will, being welcomed, being allowed to leave, having a comfortable journey, being sent away, having a disability, being prisoned, a military invasion, etc. This thesis focuses on everyday urban mobility.

In this research, the term 'mobilities research' is adopted because mobilities indicate a certain approach to movement. The subjects, thoroughfare in this case, could be studied by different approaches and by different disciplines. Mobilities are not limited to a single discipline, and it is not limited to a single subject. Yet, according to the literature researched, it obtains a certain point of view on human, social relations, politics, space, geography, etc. One of the common grounds of the mobilities researchers is that they mostly prioritise context and experience and emphasise the humane aspects. Mobilities are benefited as the methodology of this

⁵ Cresswell, Tim, "Tim Cresswell: On Rhythm", Lecture, University of Vienna - Research Platform Mobile Cultures and Societies, 2021, https://www.youtube.com/watch?v=-R-SEcfi_9c. Accessed on 05.03.2022.

thesis as it is included in the basis of how the architectural space is investigated and researched.

1.7. METHODS

Hereby, the methods for representing the gathered data and the produced knowledge will be discussed. As this thesis aims to investigate space in multi-scale approaches and scales, several methods will be explored. The decisions about adopting methods for each matter will be made according to the requirements of the matters in terms of scale and notion, aiming to present more descriptive and narrative information.

Any study or work that aims to understand the existing would require data collecting. Disciplines develop data collection frameworks in a way that fits the most to their approach. The data needs to be intelligible, savable and workable; therefore, it is translated into more controllable versions of itself by representation. The translation process focuses on taking the necessary data, excluding some that would not directly support the matter. Representation's subjective qualities are based on what parts of the data are preserved. The information being represented is filtered and stripped down from some aspects to get processed information. The filtered information is often abstracted. It does not show the raw existence anymore but renders out the clean, isolated information. Further studies about the subject are constructed upon the abstracted information. It is altered, changed, transformed, and new knowledge is formed/designed. As music abstracts the sounds in nature into seven notes and creates songs by re-composing them, architecture abstracts the space into lines and shapes, and it designs spaces by re-organising them.

1.7.1. Representation of Space

The production of architecture and planning, which conventionally involves the design of spaces that will be occupied, benefits mostly from two-dimensional graphics and diagrams that often describe the boundaries of places and their material elements. This traditional representation technique is criticised for reducing space into two dimensions and neglecting the experienced and practised space by focusing on instructions about how the space will be built. The designer is limited to a reduced and abstracted two-dimensional version of the environment. David Harvey⁶ criticises architects and planners for using dominant straight lines and fixed schema of representations resulting in creating built environments. The built environment inadequately determines daily life practices because the architectural representation filters out daily practices and does not include them in designing environments.

Michel de Certeau⁷ critiques the plans also about their top-down viewpoints. Plans look down on cities with a godly eye. Cities, where the practitioners of space live, are discussed on how they appear on top view graphics. The top view does not capture cities below a certain threshold where the daily practices and experiences occur. Sue Robertson⁸ adds to the issue by stating that the graphic representation does not describe how the architecture will be experienced. The lack of a detailed description of the spatial experience causes occupants to stumble. The encounters in space are left unassigned, and occupants become obligated to negotiate.

Therefore, technical drawing methods of conventional architecture with reduced information and a godly top-down point of view will be avoided. However, maps and mappings will be employed in representing spatial information in larger scaled systems where the connections between the spaces are prioritised. Mapping will be used in discussing multi-locational information where the singular image would not be capable of representing the matter through the level of the human eye.

⁶ Harvey, David, *Postmodernliğin Durumu*, 2014. p. 231

⁷ De Certeau, Michel, *The Practice Of Everyday Life*, 2011.

⁸ Robertson, Sue, "Drawing The Urban Highway: Mobile Representations In Design And Architecture", 2014, pp. 129 - 149.

Collage will be employed as the leading representation method throughout the thesis, considering it holds the potential to narrate spaces in a way to describe practices and experiences. It uses layered media to make a consistent and explanatory communication. It uses combinations of drawings, photographs, sketches etc. As a manipulated communication method, collage represents processed knowledge instead of presenting the raw data. Visually, the collage emphasises the matter perceivably amongst the other components of images rather than filtering out nonessential information. The image maker gains the opportunity to communicate their ideas through collages more carefully and precisely. Collage is not as strict and dominating as diagrammatic technical representation methods are. It shows the possibilities of the space and exhibits a variety of situations. It is rather interested in encouraging suggestions and discussions.

Collage is an embodied and nonlinear representational form that expands the possibilities of multiple and diverse realities and understandings. The ambiguous collage provides a way of expressing the said and the unsaid, and it allows for multiple ways of interpretation and accessibility. In qualitative research, collage is used predominantly because of counteracting the hegemony and linearity in written texts.⁹ Collage is an inspiring tool because it allows a highlighted expression of interpretable atmospheric narratives through subjectively emphasised and processed knowledge.

In this thesis, collage is used as the prevalent representation method. It is used as a tool to investigate and unravel the situations Uzunçayır comprises. Spatial systems and static components are examined through collages, which are capable of turning raw data into knowledge by unveiling possibilities and connections that are not always visible to the eye.

The research being concerned with mobility and daily life experiences; it requires studying the movement, which is directly related to time. As movement is defined as space travelled over time, the research methods and representation

⁹ Butler-Kisber, Lynn, "Collage As Inquiry", 2008, pp. 265-276.

techniques also need to capture time. Contributions of Eadweard Muybridge and Etienne-Jules Marey and the method of chronophotography should be understood when aiming to represent time and movement on a still medium which this thesis requires.

1.7.2. Representation of Movement

Eadweard Muybridge¹⁰ and Etienne-Jules Marey¹¹ were both interested in showing movement with photography in the late 19th century. Both pioneer photographers captured sequential images of a movement and documented them together as the photography technique called chronophotography. In chronophotography, phases of a motion are exhibited.

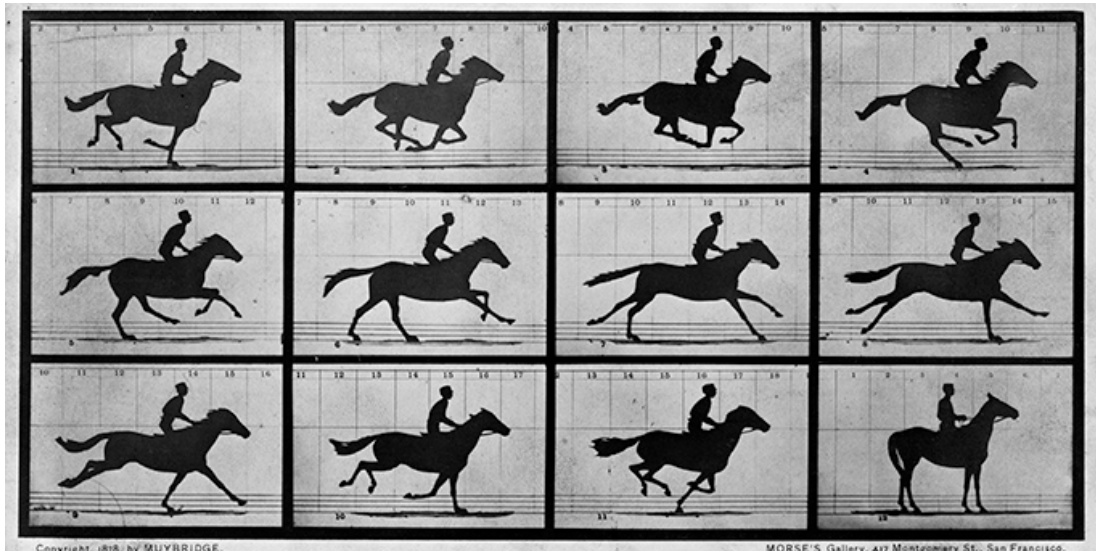


Figure 1.3: Chronophotography, Grid
Eadweard Muybridge, *The Horse in Motion*, 1878.

Muybridge as a photographer was hired to show a horse's movements to see if all the legs were touching the ground while trotting. He invented a technique in which several shutters are triggered during the horse's movement. He takes these photographs and presents them together on a grid system showing the sequential keyframes of the motion.

¹⁰ Cresswell, Tim, *On The Move*, 2006.

¹¹ Ellenbogen, Josh, "Camera And Mind", 2008, pp. 86-115.

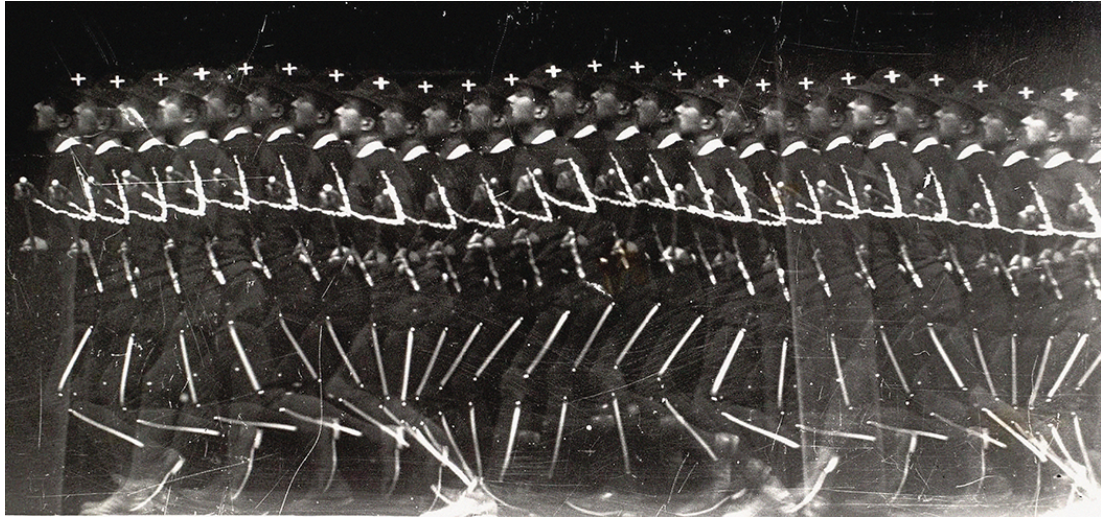


Figure 1.4: Chronophotography, Motion
Etienne-Jules Marey, The Running Lion Tamer, 1886.

Marey as a doctor and physiologist, was interested in scientifically understanding how corporeal movement works to use in physical training. He invented the camera that could capture sequential photographs. Separately taken images are exposed on the same plate.¹² Marey's inventions and techniques have led to the invention of the film recording camera and cinematography.

Chronophotography shows the moving subject in sequential keyframes. It leaves out what happens between the keyframes, so it is not effective and successful at showcasing the process. It summarises the movement by showing before and afters repeatedly. Not being able to show the whole process makes chronophotography focus on the moving object rather than the movement itself. The motion cannot be seen in this technique. Chronophotography divides the motion into equal phases and shows some of them. This causes abstraction, as it was explained above. Representation's subjectivity may be used to emphasise the matter. But the way chronophotography is doing it cannot be controlled by the image-maker. Chronophotography does it according to the equally separated lengths of time but not according to the importance of the subject.

¹² Meier, Allison, "The Scientist Who Shot His Photos With A Gun And Inspired Futurism", 2015.

Tim Cresswell¹³ argues that mobility is often desired to be studied as fixed information and represented in order to make it knowable. Units of mobilities are ordered and placed one after another. Mobility is functionalised, rationalised and abstracted, and lived motion is left filtered out. Movement as a product of space and time is studied as a sequence of positions during a series of consecutive flashes as chronophotography does. Movement could be captured in photography, but it would not say much about the mobility itself. In a series of photography, space and time are only captured in certain instants. The gaps between these instants cannot tell us about the mobility, and mobility would not be captured as a whole. In order to capture mobility completely, the instants must be closer to each other, and the frequency of the images must be increased. This means creating films instead of photographs.

Heidi Gilpin¹⁴ says that movement involves displacement, distortion, and deformation. Interpretations of movements might involve misrepresentation. Misrepresentations involve inaccuracies. Performances and mobilities can only be accurate if reenactments capture them as they are. Gilpin¹⁵ says perceiving movement requires its own displacement. If movement is a displacement, then interpreting movement is a displacement of a displacement. Recording (visual or audial) of any time period needs the same amount of time whilst reviewed.

Sarah Pink¹⁶ discusses the potential of film-making in studies of walking from an anthropological perspective. She argues that videos can be an alternative to ethnographic note-taking and describing. She suggests walking with a video as a research method. Walking with a video can develop an emphatic and sensory embodied understanding of another's experience. It produces audiovisual texts that define and represent space at a particular moment in time. She says the filmmaking process gathers embodied experiences that would be interpreted emphatically by viewers, so it becomes a place-making practice.

¹³ Cresswell, Tim, *On The Move*, 2006, p. 58.

¹⁴ Gilpin, Heidi, "Lifelessness In Movement, Or How Do The Dead Move? Tracing Displacement and Disappearance for Movement Performance", 2005, pp. 109-133.

¹⁵ Cresswell, Tim, *On The Move*, 2006.

¹⁶ Pink, Sarah, "Walking With Video", 2007, pp. 240-252.

Pink¹⁷ uses walking with a video technique where she invites participants to show her their environment on video. They walk her through and show her around the particular environment whilst walking and giving her information about the space. She says walking with a video is a practice of making a line where the researcher and the participant walk. Walking leaves a trace of footprints, breath, and scent and inscribes one's route on the video. This trace may not be meaningful to someone else who walks the same route. Later, viewing the video renders the retraceable previously walked lines. Walking with a video involves moving forward where there is a chance of encountering or getting involved with new things. Walking with a video requires the researcher to also move with the describer. It gives the viewers to engage emphatically with the idea and feeling of moving, so they gain a sense of knowing through participation. As the participant describes the space, the researcher or the cameraperson is drawn to the route.

This thesis benefits from videos. Video as an investigation method contributes to studying mobile aspects and time-related matters in this research. As academic work and scholarly products are constructed around written communication, the video format cannot be included in the research as it is. Video is used as a data gathering and sense-making tool in the research, but the knowledge extracted from it is represented and rendered as collages and photographs. Screenshot images from videos are presented as chronophotography grids, yet the images shown are not extracted from the videos as instants on repetitive frequency. The images show the instants that have the potential to start discussions in the context of the thesis. Selected images are also discussed under the related titles throughout the thesis.

¹⁷ Pink, Sarah, "Drawing With Our Feet (And Trampling The Maps): Walking With Video As A Graphic Anthropology", 2011, pp. 143-156.

1.7.3. Uzunçayır Walks

In order to gather data from Uzunçayır, film recording is used as an ethnographic research method. The mobile method of filming was used to represent the material form and experience of walking. The routes were planned between landmarks and nodes according to the possible narratives.

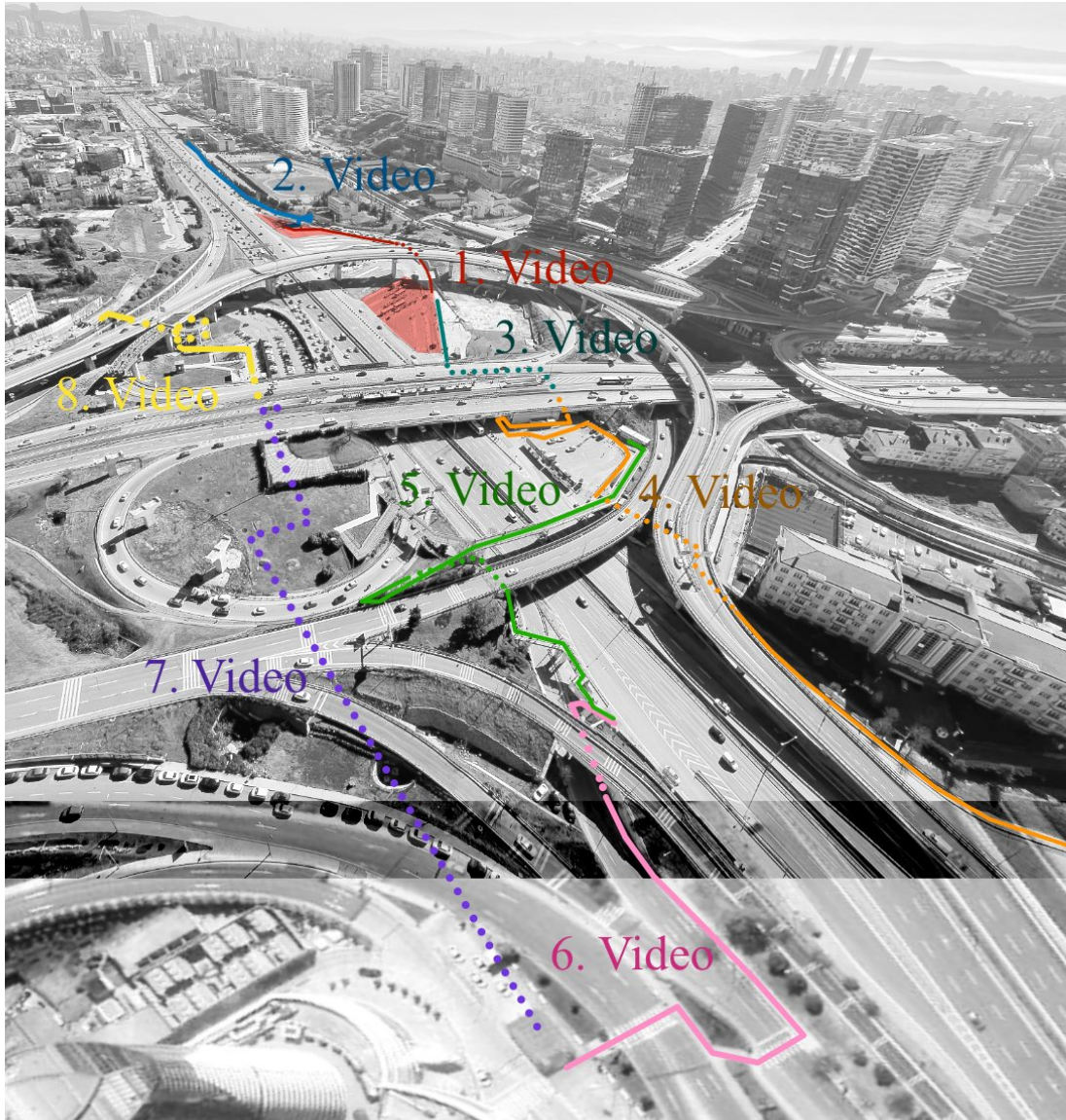


Figure 1.5: The Routes of Uzunçayır Walks
Aytek Alkaya, 2022

Walk 1:



Figure 1.6: Uzunçayır Walks, Walk 1
Aytek Alkaya, (video), 2021

Walk 1 is routed between the 4. entrance of the metro station and bus ranks. The metro entrance leads people to the square-like surface where there aren't any people. In order to get to the bus rank, the difficult-to-find fenced and channelled pathway needs to be passed through. A highly limiting pathway that forces only one type of walking opens up to a large, undefined bus rank that involves a myriad of public transport. This is a rare node where pedestrians encounter motorised vehicles.

Walk 2:



Figure 1.7: Uzunçayır Walks, Walk 2
Aytek Alkaya, (video), 2021

The route of the Walk 2 is planned between the same metro entrance as the Walk 1 and the Medeniyet University campus. The off-ramp road of D100 needs to be passed over via the overpass. The walking is located along D100, the artery next to the carriageway. The path resembles a pavement on a street, yet, it is defined by a speed wall of fast-moving vehicles and an actual wall. Offering no activities other than pure walking, it can be identified as a footpath.

Walk 3:

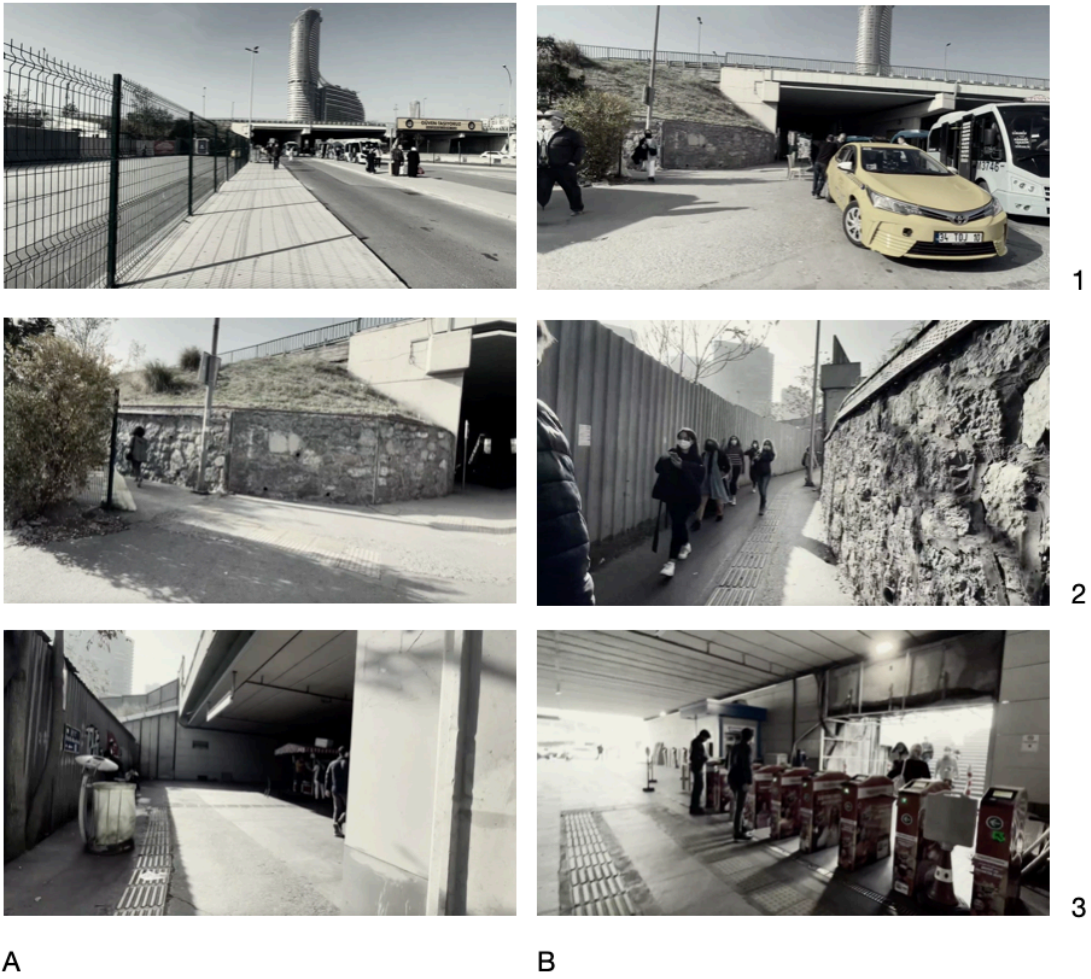


Figure 1.8: Uzunçayır Walks, Walk 3
Aytek Alkaya, (video), 2021

Walk 3 documents the journey between the bus rank and the Metrobus station. The pathway contains a location where minibuses wait for their drive. This spot facilitates activities besides walking. Drivers socialise whilst waiting. The left turn after here is a temporarily defined, corridor-like pathway. The construction site and wing walls of the elevated D100 are passed by. The Metrobus is accessed in the under-bridge, which is formed with features of a public square. It is publicly accessible and contains a small shop, although it resembles a food court in a shopping centre. The paid public transportation charges via digitalised technologies which are also monitored by security personnel 24 hours a day.

Walk 4.1:

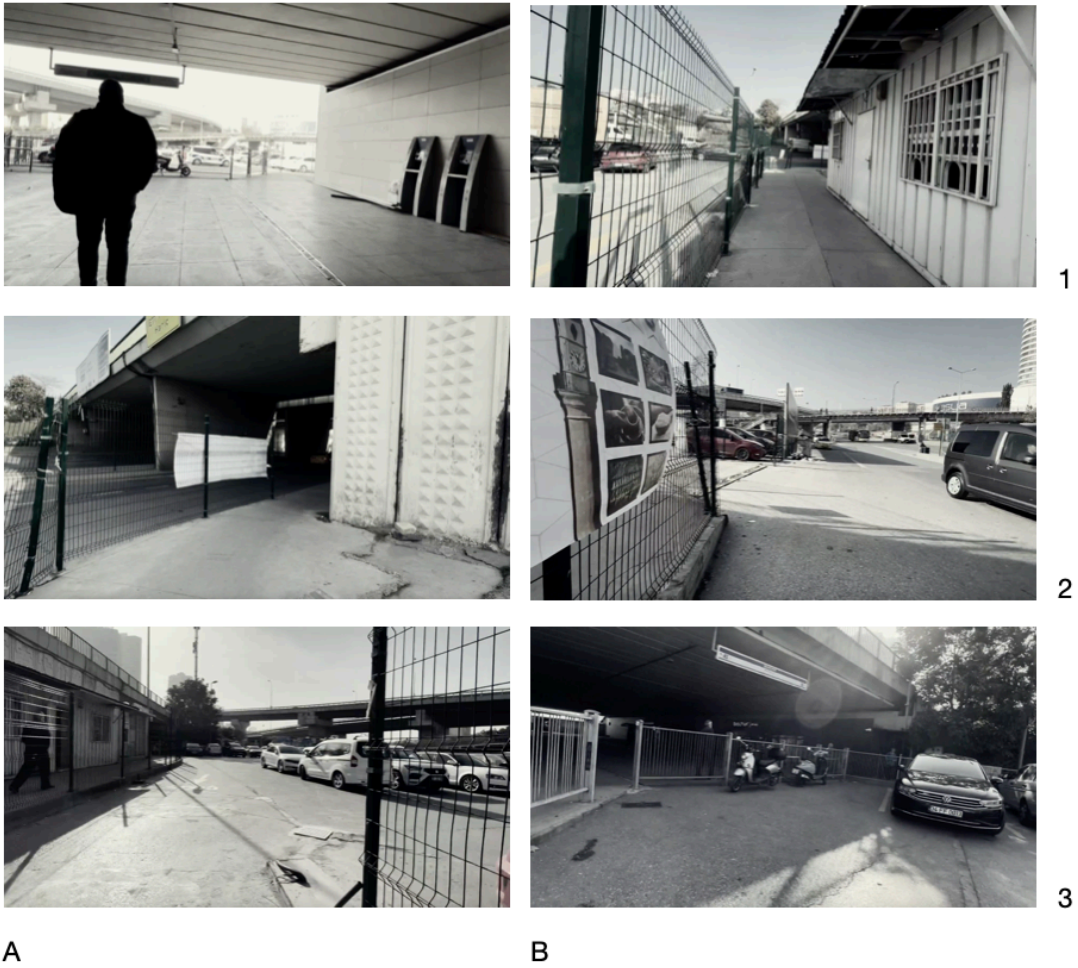


Figure 1.9: Uzunçayır Walks, Walk 4.1
Aytek Alkaya, (video), 2021

This walk began at the Metrobus station, aiming to end at the Kadıköy Anatolian Religious High School. Because of turning in the wrong direction after leaving the station, I got lost while recording. A detour through D100, the artery and the car park had to be made. Therefore there are Walk 4.1 and Walk 4.2, as they show the travels before and after returning to the origin after getting lost. Getting lost is somewhere is about the orientation. And the lack of spatial references that would help people locate and orient themselves is about the spatial organisation and design.

Walk 4.2:



1



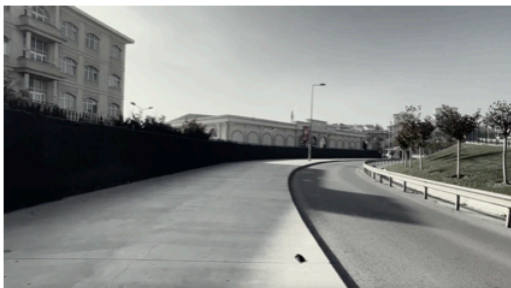
2



3



4



A

B

Figure 1.10: Uzunçayır Walks, Walk 4.2
Aytek Alkaya, (video), 2021

The second section of Walk 4 was between the Metrobus station and the high school. The walk starts in the under-bridge of D100, the highway. The pathway that starts next to the car park goes through the under-bridge of the pedestrian overpass, the under-bridge of the on-ramp of the elevated D100. After exiting the under-bridge, the path offers two choices (3B). Although the high school is seen in the front very clearly, the building and the environment don't give any clues about where the entrance is and which way is needed to be taken. I chose the pathway that continues under the on-ramp for a while, providing almost a definition. It led me to get lost again. The smooth concrete pavement continues aligned to a narrow road which is not separated. Although this path was built on a more humane scale, the lack of people was suspicious. The pathway leads to the car park entrance of the building; I assumed a conference centre on the high school campus. The distances between landmarks and nodes are far due to being designed for the speed and scale of the automobile. This path was exceptionally long. Also, this route involves three under-bridges very near to each other. They formed interesting spaces with different sizes, heights, and materials.

Walk 5:



1



2



3



4



A

B

Figure 1.11: Uzunçayır Walks, Walk 5
Aytek Alkaya, (video), 2021

Walk 5 is routed between the Metrobus station and the drop-off spot for minibuses on the frontage in the opposite direction of the D100, the artery. This walk is the first one that crosses the D100. The path consists of a highly complex system of overpasses, stairs and turns. It is important for spaces to offer mobile possibilities for walking in order for people to create their own journeys and experiences along with it. Pedestrian separation structures offer only one type of activity which is walking in a strict way without pausing, turning, resting, etc. And they are designed with a certain lack of stimulation to make people follow the pre-determined route. But this overpass system gives some options in certain locations. Giving options in a structure, which is designed without references and landmarks, causes disorientation. This leads to not being able to locate yourself and easily getting lost by choosing the wrong option. The walk ends in the frontage of D100, which allows the rare encounter between pedestrians and automobiles.

Walk 6:



1



2



3

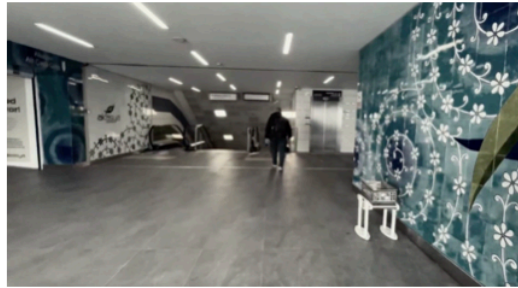
A

B

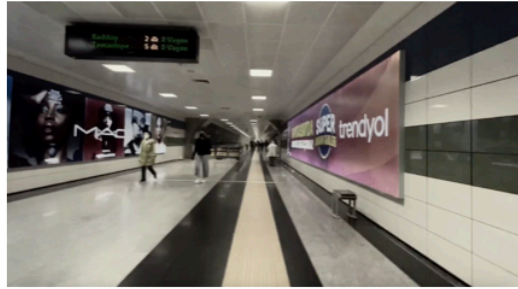
Figure 1.12: Uzunçayır Walks, Walk 6
Aytek Alkaya, (video), 2021

Walk 6 documents the access to Akasya shopping centre, where there is also an entrance to the metro station. This is a shorter walk in comparison to others. This route requires walking along the service road that offers access to Akasya shopping centre and connects it to D100. Walking on the narrow pavement next to the carriageway in the small under-bridge leads to the open space with grass and trees. This pavement connects to Akasya shopping centre with a pedestrian crossing.

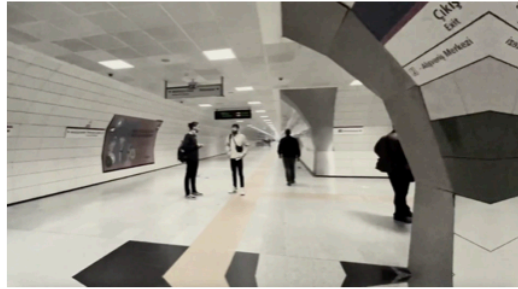
Walk 7:



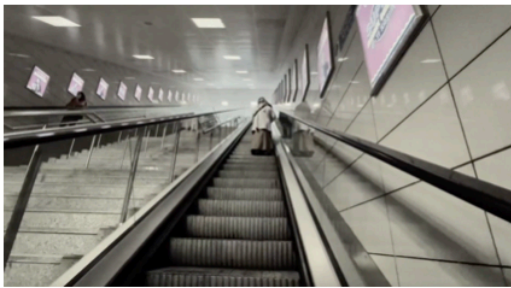
1



2



3



4



A

B

Figure 1.13: Uzunçayır Walks, Walk 7
Aytek Alkaya, (video), 2021

Walk 7 is planned between Akasya shopping centre and Metrobus station. This walk includes the metro tunnels, which also work as an underpass if the tunnel is exited to access the Metrobus connection. The walk begins with an escalator down the underpass. Escalators are the most dominating structures as they don't even allow turning back. Taking one step to the escalator determines the following mobility. The escalator leads to the metro tunnel, which is used as an advertisement board. The signs on the walls need to be followed as the tunnel is designed as a single architectural object without any stimulation or spatial reference for orientation. The right turn for the Metrobus connection leads to the open space, which looks like a large road without the automobile (4B). A short walk through this space arrives at the Metrobus station.

Walk 8:



1



2



3



4

A

B

Figure 1.14: Uzunçayır Walks, Walk 8
Aytek Alkaya, (video), 2021

Walk 8 connects the Metrobus station to the Çamlıca Religious High School for Girls. The school is located at a higher elevation. The elevation difference is overcome by the round structure (2A). Although this structure offers interesting views in 360 degrees, its round and repetitive form is disorienting. The highest level of the structure (3A) is roofed by the on-ramp's bottom.

2. THE MOBILE CITY

Urban mobility is researched at the city scale in this chapter. The city consists of places, spaces, structures and openings. The material setting constructed by material systems allows activities, performances, and mobilities to occur, which establishes the affordance and possibilities of experiences, social relations and meaning. As the physical layer of the city determines practises and experiences, it is essential to investigate how its components that allow mobility are formed.

Therefore this chapter explores what the city is and how it can be meaningful in the context of urban mobility. How urbanisation is related to transportation and how different city plans allow certain types of movements are researched. Compact city and urban sprawl are presented as two essential realities of urbanisation that demonstrate contrasting developments and affordances in terms of adopted mobility modes.

The relationship between the urban environment and mobility spaces is discussed in consideration of the physical necessities for mobility modes in spaces. Each mobility mode requires certain material features, which are improved under the influence of the mobility modes in return.

As a city in which urbanisation occurred over stages and layers, Istanbul compiles contradictory plans and mobilities that are visible on the city's geographies. Istanbul's urbanisation and mobility's effects on its development are illustrated through the academically produced knowledge obtained from the literature.

2.1. THE CITY AND MEANING

As humans, we live on a portion of the earth's surface from which we pick out the necessary food and materials. It serves as a residential territory.¹⁸ We shape the earth's surface according to our intentions through urbanisation, which also requires us to adapt and get moulded with it. David Harvey describes cities as plastic by nature because they are moulded according to our images and altered into shapes we can live in. In return, they shape us by the resistance they offer when we try to impose our personal form on them.¹⁹ The city is a reflection, projection and product of people. People make cities by turning them into a form of humanism individually or collectively. The city then organises social relations and cultural life by defining public and private domains, social positions and rules, power relations, and security.²⁰ Cities, spaces or defined surfaces of the earth are physically territorialised by materialistic limitations. These sedentary components of space are presented as the provider of practice.²¹ The structure and layout of the city provide circulation of information and access to goods and services.²² The material fabric of the city demonstrates static architecture that is executed through mobility.²³ The city, which is internally and externally crisscrossed and linked by the circulation of people, vehicles and objects, is conventionally evaluated according to psychical and passive morphologies in terms of their capacities to host and shelter immobile human practices. The city is constituted by a static ensemble of material objects that are bounded territorially, yet the experience and spatial practice of the city is best conceptualised by critical mobilities.²⁴

¹⁸ Fliedner, Dietrich, *Society In Space And Time*, 1981.

¹⁹ Harvey, David, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*, 1992.

²⁰ Grosz, Elizabeth, "Bodies-Cities", 1998, pp. 31-38.

²¹ Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack, *The Geography Of Transport Systems*, 2013.

²² Grosz, Elizabeth, "Bodies-Cities", 1998, pp. 31-38.

²³ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

²⁴ Addie, Jean-Paul D., "Towards a Ctiy-Regional Politics: In Between Critical Mobilities and the Political Economy of Urban Transportation", 2015, pp. 45-63.

Embodied practices are essential to how the world is experienced.²⁵ We experience time-space relations through bodily interactions as both static and flow. Ole B. Jensen argues that mobility contributes to building and making sense of these interactions as meaningful engagements with the world. Mobile sense-making conducts sociality and produces mobile subjectivities by revealing coded messages of the places.²⁶ We experience the world through places. When the places are invested with meaning, the world becomes meaningful.²⁷

Bodies engage in material and concrete spaces. Bodies write their own meanings and feelings upon spaces, constructing places. Meaning reproduces places by memories, identities, actions, performances and movements. This is how active and embodied practices of bodies constitute being in the world.²⁸ Mobile bodies produce places by walking. Walking is a performance that includes observing, monitoring, remembering, listening and touching.²⁹ In the practice of walking, tactics are developed such as the manner of walking, the pace, the routes, and the shortcuts. These integral processes produce the place the body is in.³⁰ Walking is fundamental to being human as we make gestures, communicate, draw paths and leave traces or trails.³¹

Michel de Certeau illustrates the crucial role of walking in the production of places, in cities. De Certeau argues that experiencing the city can only be meaningful when it is practiced by walking. Everyday spatial practices structure social life. And the mobile layer gives identities and characters to places. Mobile bodies compose stories. These are personal relations and they are not meaningful to anyone else. Accumulation of the reserved stories defines places. This is how people connect to places, personalise them and give them character.³²

²⁵ Cresswell, Tim, Peter Merriman, "Introduction", 2011.

²⁶ Jensen, Ole B., "Flows of Meaning, Cultures of Movements – Urban Mobility as Meaningful Everyday Life Practice", 2009, pp. 139–158.

²⁷ Cresswell, Tim, *Place: An Introduction*, 2015.

²⁸ Edensor, Tim, "Moving through the City", 2014, pp 121-140

²⁹ Ingold, Tim, and Jo Lee Vergunst, "Introduction", 2008.

³⁰ Kabachnik, Peter, "Nomads and mobile places: disentangling place, space and mobility", 2012, pp 210–228.

³¹ Murray, Lesley, Susan Robertson, "Drawing mobile shared spaces: Brighton bench study ", 2017, pp. 211-224.

³² De Certeau, Michel, *The Practice Of Everyday Life*, 1984.

Erling Kagge agrees that walking makes places meaningful. Whilst walking, he remembers the memories about the place; and witnesses how it is reproduced by observing people's happiness, urgencies, anxieties, and watching the effects of time on trees and buildings. Walking is a way of knowing about places for him because being slow in the city helps to notice valuable things.³³

The personal and subjective relations to places which give them meaning can only be achieved within the grasp of the city. Being lifted above from the city's streets or being in only geometrically drawn spaces disable the contact with the city's identity.³⁴ In order to multiply the readings of the city³⁵, the bodies need to move through the grain where sensual and sensorial experience is offered.³⁶

2.2. URBANISATION

Urbanisation is considered a process of transforming nature.³⁷ It is the procedure of taming environments into cities for our purposes, including economic trades, transportation, religion, bureaucracy, socialisation and other activities. It involves changing the ground of life by standardising measurements.³⁸ We produce earthbound artefacts to alter the territories according to our necessities through constructing cities, structuring settlements, planning circulations, etc.³⁹

The city is a centre for intensified flows and a site for motions of people across and beyond its boundaries.⁴⁰ It generates and attracts movements.⁴¹ The city is introduced as a ceaseless mobile transaction that is constituted by multiple flows,

³³ Kagge, Erling, *Walking: One Step at a Time*, 2019.

³⁴ De Certeau, Michel, "Walking in the City", 2007, pp 249-258.

³⁵ Lefebvre, Henri, *Writings on Cities*, 1995.

³⁶ Edensor, Tim, "Moving through the City", 2014, pp 121-140

³⁷ Hurducaş, Iulia, "An Urban View on the Someş River", 2016.

³⁸ Massumi, Brian, *Parables for the Virtual: Movement, Affect, Sensation*, 2002.

³⁹ Fliedner, Dietrich, *Society In Space And Time*, 1981.

⁴⁰ Edensor, Tim, "Moving through the City", 2014, pp 121-140

⁴¹ Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack, *The Geography Of Transport Systems*, 2013.

interactions and linkages between different scales, from the local to the global.^{42,43} The practices and movements are associated with varying spaces as they involve a range of embodied experiences, technologies and infrastructures.⁴⁴

Transportation as physical mobility is woven into our lives and the places we live in, on the scales from neighbourhoods to regions. It is fundamentally diffused within the city, and it has the power to transform the city since it is associated with the economic, social, political and cultural aspects of places.⁴⁵ Transportation shapes urban form as every place needs to be connected. They are interrelated concepts.⁴⁶ Technological advancements in transportation influence how cities grow. The connectivity capacity of places defines their characteristics as components of cities by identifying them as central, local and rural.

Aldo Rossi summarises the transformation of the city in three phases. The first phase is the destruction of the medieval city, where the place of work and residence is in the same building. The changes in production and consumption affected the primary form of life. The second phase is the progressive expansion of industrialisation. High separation of residence and workplace, distinguishing production and administration, and precise division in labour transformed the city decisively. The third stage is the transformation of the development of individual transportation means and efficient means of public transportation. The work and the residence get to be located in any part of the territory, and their connection became an issue of time rather than proximities.⁴⁷ Rossi's categorisation reveals the importance of mobility in urbanisation. The technology and culture of how people move directly affect the city's growth.

⁴² Jensen, Ole B., "Flows of Meaning, Cultures of Movements – Urban Mobility as Meaningful Everyday Life Practice," 2009, pp. 139–158.

⁴³ Graham, Stephen, and Simon Marvin, *Splintering Urbanism*, 2001.

⁴⁴ Cresswell, Tim, Peter Merriman, "Introduction", 2011.

⁴⁵ Hanson, Susan, "Transportation Geographies and Mobilities Studies: Toward Collaboration", 2015, pp. 45-63.

⁴⁶ Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack, *The Geography Of Transport Systems*, 2013.

⁴⁷ Rossi, Aldo, *The Architecture Of The City*, 1982.

The city is formed by the mobilities⁴⁸ for necessary everyday practices and socialisation. Both everyday activities such as going to work, shopping for food, visiting a doctor, and socialisation require access; access to facilities and other people. Advancements in technologies such as the internet, car, and fridge altered the urgency and rhythm of corporeal mobility.⁴⁹ The necessity of being in the same place to be connected is reduced as spatial nearness was the only communication method. Regimes and politics of using communication and transportation technologies in urbanisation cause cities to grow differently.

Cities are observed in predominantly two different plans according to their land use, transportation and distances between components which are compact, high-dense cities and sprawled cities (which could also be identified as vertical and horizontal urban growth). These urbanisation types are often merged and combined in cities. Compact cities are built densely, allowing mixed land use which leads to walkable distances. They grow more organically and are developed anachronistically with individual interventions by manifold actors. It builds upon what is already existing through the individual and small-scale interventions in the city. On the other hand, the growth of sprawled cities benefits from transportation technologies more, allowing them to locate components in any location desired. Sprawled cities are a product of urban planning often implemented by authority, leaving no room for small-scale and individual intervention.

2.2.1. Compact Development

The ancestors of the city today were compact settlements. The groupings that later evolved into cities, were all walking environments. Because most movements inside cities were accomplished on foot, places needed to be near each other. This caused cities and neighbourhoods to be assemblages of residences, workplaces and other functions.⁵⁰ Cities were designed according to the point of view of the

⁴⁸ Sheller, Mimi, "Mobilising Transportation, Transporting Mobilities", 2015, pp. 45-63.

⁴⁹ Hart, Julian, *Towns and Cities: Function in Form*, 2015.

⁵⁰ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

pedestrians. Streets, arcades, and open spaces were defined according to the walking people.⁵¹

Compact settlements with high densities contain mixed land uses that are connected through a street network.⁵² Mixed land-use offers a system of activities, including residing, eating, shopping working, socialising, etc., that reinforce each other. The diverse use creates active streets and a 24-hour city. Vibrant street life is essential to developing a public realm for people.⁵³ Mixed-use offers a range of activities that can be accessed by a single trip which would be convenient for residents.⁵⁴ The mixture of uses attracts people from different backgrounds with different needs. The diversity and public contact help sustain the city.⁵⁵ Various activities encourage a social mix which leads to social sustainability and safety. Vibrant places are essential in achieving safe cities.⁵⁶

Compact cities are livable and sustainable. The livable city is requested to answer various social, economic, and environmental needs.⁵⁷ The mixed-use with a variety of trades and commerce contributes to economic sustainability. A diverse crowd being attracted to mixed-use provide social strength. Activities and facilities being near to each other don't require the city to extend the boundary of the built and natural environment. This helps preserve nature. Also, the walkable nearnesses provide energy efficiency, making the compact city ecologically and environmentally sustainable. With these qualities, compact cities can be identified as livable environments. Compact urban forms, which are achieved by mixed-use, are more walkable. Walkability is important because its slowness creates a sensorial experience.⁵⁸ Through those sensorial experiences, we bodily engage with the places.

⁵¹ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

⁵² Joh, Kenneth, Marlon G. Boarnet, Mai Thi Nguyen, William Fulton, Wally Siembab, and Susan Weaver, "Accessibility, Travel Behavior, and New Urbanism", 2008, pp. 81-89.

⁵³ Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck, "The Inner City", 2000, pp.352-359.

⁵⁴ O'Hare, Daniel, "Urban Walkability in the Subtropical City: Some Intemperate Considerations from SEQ", 2006.

⁵⁵ Jacobs, Jane, *The Death And Life Of Great American Cities*, 1961.

⁵⁶ Martire, Agustina, Anna Skoura, Hannah Miskimmon, Koto Design, *Gentle Densities*, 2021.

⁵⁷ Panagopoulos, Thomas, Jose Antonio Gonzalez Duque and Maria Bostenaru Dan, "Urban planning with respect to environmental quality and human well-being", 2016, pp. 137-144.

⁵⁸ Murray, Lesley, "The Walking Commute: Gendered and Generationed", 2020, pp. 109-117.

The practice can only be meaningful through social and cultural experiences through mobility.⁵⁹ The compact city offers engagement as we can perform embodied practices through its walkable and small-scale components.

Infrastructure networks are central to planning, as argued earlier.⁶⁰ In urban planning, one of the most important design purposes is to enable access to and through parts of the city. Most cities were structured in a way to support walkability as it is the oldest transportation form. The urban transportation culture changed in the 19th century with the introduction of mass public transport. Public transportation still requires pedestrians in between the transportation modes. So, walking continued to be an important transportation mode. Walking lost its importance in urbanisation after individual car transport became the dominant transportation mode in the 20th century.⁶¹ As the materialisation of mass, motorised and private transport has changed how places are accessed, prioritising the automobile has transformed the city.⁶²

2.2.2. Urban Sprawl

The automobile extends people's ability to move by allowing travel in any direction in complex road systems.⁶³ As the enabler of auto-mobility, the road system strengthens connectivity and circulation in urban spaces. The increased accessibility range provided by road systems facilitates a much richer array of possible destinations for any purpose.⁶⁴

The circulation spaces, including streets and highways, are all connected to each other. Roads work as one enormous web of axial segments passing through places. Although this web comprises splits, shifts, turns and physical changes, the affordance of one continuous movement makes the web theoretically one very long

⁵⁹ Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack, *The Geography Of Transport Systems*, 2013.

⁶⁰ Graham, Stephen, and Simon Marvin, *Splintering Urbanism*, 2001.

⁶¹ O'Hare, Daniel, "Urban Walkability in the Subtropical City: Some Intemperate Considerations from SEQ", 2006.

⁶² Hart, Julian, *Towns and Cities: Function in Form*, Ashgate, 2015.

⁶³ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

⁶⁴ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

and fractured path. Every building, every city and every region is connected to each other by *the path* which tours the whole world.

The road networks bind cities, regions and nations and turn them into functioning political geographies.⁶⁵ Auto-mobility spaces connect regions, neighbourhoods and districts.⁶⁶ The network of roads is assumed to integrate different classes in cities.⁶⁷ Suburban and rural places are linked, the jobs offered in metropolitan areas are available, and any other service or entertainment centre is within reach. The accessibility that auto-mobility provides enables people to move in urban areas as they desire. As accessibility became a priority, it influenced contemporary spatial organisation.⁶⁸ Cities transform accordingly, and in some cases, they are built around the principle of auto-mobility.

The automobile changed the urban form and urban daily life. The revolutionary invention and its spread influenced designers and architects as well. Modern architecture and urban planning produced alternative plans and future city predictions adopting auto-mobility. Le Corbusier's projects Plan Voisin, Plan Obus, Ville Radieuse; Frank Lloyd Wright's Broadacre City; Geoffrey Jellicoe's Motopia; Norman Bel Geddes's Futurama; Skarne's industrial housing project are examples of visions of automobile-based cities. As Le Corbusier's opinions are often discussed in mobilities related literature ^{69,70,71,72,73,74}, his approach is demonstrated in further detail.

⁶⁵ Graham, Stephen, and Simon Marvin, *Splintering Urbanism*, 2001.

⁶⁶ Calthorpe, Peter, "The Regional City", 2003.

⁶⁷ Graham, Stephen, and Simon Marvin, *Splintering Urbanism*, 2001.

⁶⁸ Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack, *The Geography Of Transport Systems*, 2006. p.158.

⁶⁹ Lynch, Kevin, *What Time Is This Place?*, 1976.

⁷⁰ Sheller, Mimi, "Automotive Emotions", 2004, pp. 221-242.

⁷¹ Wilson, Mabel O., "Dancing In The Dark", 1998, pp. 99-113.

⁷² Robertson, Susan, "Visions Of Urban Mobility: The Westway, London, England", 2007, pp. 74-91.

⁷³ Borden, Iain, *Drive: Journeys Through Films, Cities And Landscapes*, 2012.

⁷⁴ Harvey, David, *Postmodernliğin Durumu*, 2014. p. 231

Le Corbusier, a pioneer in modern architecture, planned cities that were preoccupied with the concept of mobility. He believed that a successful city must be made for speed. According to Le Corbusier, the city should be planned by straight lines, regardless of the geography, because curves ruin and paralyse the traffic.⁷⁵

David Pinder describes Le Corbusier's urban design as a rationalist vision that aims to clean up, re-organise and purify the city by remaking it in an order with universal, geometric and pure concepts. In his plans, elements and functions are differentiated, classified and redistributed, and any other unclassified spatial component would be a 'waste'. Differentiating and classifying elements and functions result in zoning, which creates boundaries and hierarchies to be used as 'a social organiser par excellence'. Le Corbusier believes that reshaping the cellular condition of channels, the mobility spaces and opening them are vital to urgent urbanisation.⁷⁶

Le Corbusier is criticised for ignoring the cities' facilitation of socialisation. The dispersion of gathering spaces over great distances in his plans is considered a method of his intention to *antisocial urbanism* which would lead to an antisocial society.⁷⁷ Le Corbusier's utopia narrates finishing up work quickly with the assistance of technology, commuting home by automobile through stimulation reducing highways, and staying at home alone, which provides personal solitude as a basic human need to be fulfilled.⁷⁸ Le Corbusier approached the city as a factory that consisted of individual productions. He used design as a *necessary discipline* method to separate people from each other to obstruct any revolution related turmoils.⁷⁹

⁷⁵ Anderson, Benedict, *The City In Transgression*, 2021.

⁷⁶ Pinder, David, "Modernist Urbanism And Its Monsters", 2005, pp. 179-190.

⁷⁷ Richards, Simon, "The Antisocial Urbanism of Le Corbusier", 2007, pp. 50-66.

⁷⁸ Le Corbusier, *The Radiant City*, 1967.

⁷⁹ Pouliot, Hugh, "Machines For Living: Reflections On Le Corbusier's Plan Obus, 2011.

Although Le Corbusier's city plans were never applied, his and other designers' visions of auto-mobility based cities influenced contemporary cities. Los Angeles is often mentioned in mobility literature ^{80,81,82,83} as it was the first city that developed an urban highway system, and the city itself is formed around auto-mobility. Reyner Banham discusses mobility and land development in detail over Los Angeles in his BBC produced documentary in 1972 called *Reyner Banham Loves Los Angeles*. In his book, he compartmentalises Los Angeles into four *ecologies*, one of which is *Autopia*. Banham states that Los Angeles is known for auto-mobility and highways because of their dominance in the city image and the lack of other transportation modes.

People spend a large portion of their time in highways, yet it provides an ideal version of democratic urban transport together with the high speed of the private car. The monuments, as Banham calls the highways, fix the city's canonical form and change the 'simple-minded' rules of urban design. The houses and the automobiles provide the dream of a good life, and the city embodies the most current vision with technology. Although the physical form doesn't allow casual encounters, the city offers room to manoeuvre, unlike old cities where people are pressed together in labyrinths.⁸⁴

Banham disagrees that certain densities of the population require certain physical forms. Los Angeles shows that there is no correlation between urban form and social form. Banham suggests Los Angeles is built similarly to how London is built. The only difference is that buildings are shoulder to shoulder in London because when it was built, everything moved on foot and distances needed to be shorter. Still, Los Angeles didn't have to end on precise borders because its citizens had transportation.⁸⁵ Banham adds that the automobile is not responsible for the less

⁸⁰ Robertson, Sue, "Drawing The Urban Highway: Mobile Representations In Design And Architecture", 2014, pp. 129 - 149.

⁸¹ Minton, Anna, *Ground Control*, 2009.

⁸² Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

⁸³ Cresswell, Tim, *On The Move*, 2006.

⁸⁴ Banham, Reyner, *Los Angeles: The Architecture of Four Ecologies*, 1971.

⁸⁵ Banham, Reyner, *Reyner Banham Loves Los Angeles*, Film, 1972.

densely built-up structure of Los Angeles. On the contrary, the urban form allowed a successful adaptation of auto-mobility that wouldn't be possible elsewhere without wrecking the city.⁸⁶

Auto-mobilisation leads to urban expansion by providing high accessibility.⁸⁷ Considerable reduction of friction which motorised mobility offers changes land development plans⁸⁸ and leads to the creation of urban sprawl⁸⁹. Mobilities are located at the core of everyday life practices and contemporary urbanisation. Transportation systems contain a transformative capacity over planning and politics. Transportation infrastructures produce territorial expansion and selective densification by connecting technology. Auto-mobility conditions the dispersed growth beyond the compactness of the urban core. The availability of the automobile reconstitutes the physical scale of the city landscape and social, political and morphological divisions in the city by enabling selective freedom and implementing disciplinary control over everyday life. Mobilities and spatial politics changed cities' shape and size and shifted urban components as peripheries became centres and centres became frontiers. Flows integrate extended urban agglomerations and change spatial functions via connectivity networks.⁹⁰

Auto-mobility fragments social practices that are occurring in the city. The spatial dispersion of the city leads to inequality and segregation.⁹¹ Homes get separated from facilities, jobs and leisure sites.⁹² Places and events get dispersed by the sprawl. City structure becomes functionally segregated, raising the dependence on motorised mobility as a transportation mode between units.⁹³ Spatialised functions are proceeded at high speeds by privileged groups. Fragmented and amorphous zones

⁸⁶ Banham, Reyner, *Los Angeles: The Architecture of Four Ecologies*, 1971.

⁸⁷ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

⁸⁸ Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack, *The Geography Of Transport Systems*, 2013.p.207.

⁸⁹ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

⁹⁰ Addie, Jean-Paul D., "Towards a Ctiy-Regional Politics: In Between Critical Mobilities and the Political Economy of Urban Transportation", 2015, pp. 45-63.

⁹¹ Madanipour, Ali, "A Critique of Public Space: Between Interaction and Attraction", 2020, pp 7-15.

⁹² Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

⁹³ Gehl, Jan, *Life Between Buildings*, 2011.

reframe the city through segregation and hierarchy.⁹⁴ Zoning of the functions dictates the city and the countryside's borders and regulates individuals according to a hierarchical social order.⁹⁵

The sprawl, “the automobile’s natural environment”, causes segregation and social isolation via the highly inefficient built environment.⁹⁶ The segregation in socially divided cities entrenches difference and increases fear and distrust of other groups.⁹⁷ People surround themselves with other people from similar groups and perceive those who are different as dangerous.⁹⁸ The isolation becomes worse through the formation of exclusive, politically controlled groups. They become hostile towards those branded as different.⁹⁹ As the sprawled forms became common, it is discussed that places being near to each other wasn’t just because of the lack of technological transportation modes; rather, it had some other advantages, too.

2.2.3. Compact and Sprawled Plans

High-density urban areas with mixed-use development are discussed as opposed to urban sprawl to achieve a more diverse community where auto-mobility is not dominant.¹⁰⁰ High density limits urban growth by intensifying development and activities. It focuses on public transportation and urban design quality and supports social mixes by emphasising diverse land use.¹⁰¹

Automobile-dependent cities are perceived as an expression of freedom, yet low-density and dispersed cities are less sustainable than high-density cities with lower automobile traffic. The concept of density includes the issues of transportation

⁹⁴ Addie, Jean-Paul D., “Towards a City-Regional Politics: In Between Critical Mobilities and the Political Economy of Urban Transportation”, 2015, pp. 45-63.

⁹⁵ McGrath, Brian, and Grahame Shane, "Introduction: Metropolis, Megalopolis And Metacity", 2012, pp. 641-656.

⁹⁶ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

⁹⁷ Minton, Anna, *Ground Control*, 2009.

⁹⁸ Minton, Anna, "Why Are Fear And Distrust Spiralling In Twenty-First Century Britain?", Report, 2008.

⁹⁹ Davis, Mike, *City Of Quartz*, 1992.

¹⁰⁰ Ewing, Reid, and Shima Hamidi. *Measuring Sprawl and Validating Sprawl Measures*, 2014.

¹⁰¹ Joh, Kenneth, Marlon G. Boarnet, Mai Thi Nguyen, William Fulton, Wally Siembab, and Susan Weaver, "Accessibility, Travel Behavior, And New Urbanism", 2008, pp. 81-89.

and compactness. Density involves the discussions of mixed land uses and diversity.¹⁰² Demonstrating the features of compactness, walkability, mixed-use development and vertical growth¹⁰³ are parts of successful cities in terms of social sustainability. Walkable and intimate cities that focus on the pedestrian experience define livable environments by contributing to cultural, economic and political functions.¹⁰⁴ Mixed-use, which is mostly a combination of housing, retail, health, education and light industry, encourages social diversity.¹⁰⁵ High-density and mixed-use contribute to reducing inequalities by providing inclusion and cooperation that lead to having more secure and safe cities, therefore ensuring a better quality of life.¹⁰⁶

As discussed earlier, urbanisation involves changing nature. The compact city changes more organically and gradually, adding on top of each other due to its fractal structure than the sprawled city. Its growth is formed by individual decisions, which allow people who live in it to make contributions and make interventions to the places as well. On the other hand, the sprawled city is planned holistically from a larger scale by planners employed by an authority. They are often visions of an urban planner, making the city appear more human-made and artificial. In modern planning, zoning is usually applied, and the places are designed as large, geometrical forms. The city, described as a diagram during planning, determines experience and meaning by assembling static elements of which the boundaries and materials are planned.¹⁰⁷

Architecture tends to suggest alternatives to existing. Questioning the culturally accepted ways of living is one of the essential features of creative disciplines. Yet, I believe that city is a too complex of a mechanism to be experimented on by one designer if it is to be built. The modern city is introduced as

¹⁰² Bay, Joo Hwa Philip, and Steffen Lehmann, "Compact Urban Form, Density And Sustainability", 2017, pp. 3-22.

¹⁰³ Alkaya, Aytak and Hülya Aybek, "Urban Green in the Process of Vertical Growth", 2016.

¹⁰⁴ Lehmann, Steffen, "The Challenge of Transforming Low-Density City into a Compact City", 2017, pp. 3-22.

¹⁰⁵ Martire, Agustina, Anna Skoura, and Hannah Miskimmon, *Gentle Densities: The Potential of Sustainable Gentle Density, Mixed Use, Mixed Tenure And Public Participation In Future Housing In Belfast*, 2021.

¹⁰⁶ Bay, Joo Hwa Philip, and Steffen Lehmann, "Compact Urban Form, Density And Sustainability", 2017, pp. 3-22.

¹⁰⁷ Robertson, Sue, "Drawing The Urban Highway: Mobile Representations In Design And Architecture", 2014, pp. 129 - 149.

a reflection of desires for order and transcendence. Purified spaces are framed following centralised regulations, forming heterogenous agglomerations. Modern attempts at accumulating, categorising and exhibiting objects by scientific principles have become visible in public sites.¹⁰⁸ Cities are extended through flatness by Euclidian geometry that dominates the spatial perception of the world. Spaces are regulated through flattened plane surfaces for smooth and seamless human automation. Activities programmed by straight lines, right angles and squared forms cause non-responsive mobility by abandoning natural connections.¹⁰⁹ Too much planning eliminates the possibility of making meaningful connections to the city. Cities contain numerous layers that are intervened and adjusted every day by every person to make spaces more personal, useful and comfortable. One designer or one group of designers can not possibly foresee all of the outcomes of city scaled interventions. An imprecise intervention would fracture the balance of the layers and force people to have adverse daily lives. The power of changing people's lives should not be left to one authority.

Today, most cities carry the forms of both compact and sprawled cities. Often, the city centres preserved their compact origins while the neighbourhoods built during the expansion of cities reflect sprawled characteristics. Istanbul is an example of a city that carries traces of both compact and sprawled formations.

2.3. ISTANBUL'S TRANSPORTATION BASED URBANISATION

Urbanisation in Istanbul has stages producing different morphologies which could be understood through the influences of urban movements. Older urban centres are formed, displaying features of high-density morphologies. The city is compact and contains mixed land use. The urban morphology produced during the radical expansion of Istanbul in the 1970s indicates an urban pattern with further proximities between built forms caused by zoning. The opportunity for distributing certain urban districts over significant distances could be explained by introducing the automobile

¹⁰⁸ Edensor, Tim, "Moving through the City", 2014, pp 121-140

¹⁰⁹ Anderson, Benedict, *The City In Transgression*, 2021.

into daily life. The morphology formed after the 2000s contains even distanced urban areas, establishing sub-urbanisation and making the use of the automobile an inevitable necessity. Istanbul contains a compilation of urban patterns, urbanisation types and urban movement modes.

Istanbul's growth revolved around transportation, which is a crucial trigger of urbanisation. Highways are particularly important because they indicate the boundaries of urban centres as they tether the fringes of places and orientate the direction of urbanisation as they offer accessibilities to prospective urban centres. The influences of the transportation network on Istanbul's urbanisation type can be observed in morphologies of areas and help indicate the types and eras of urbanisation.

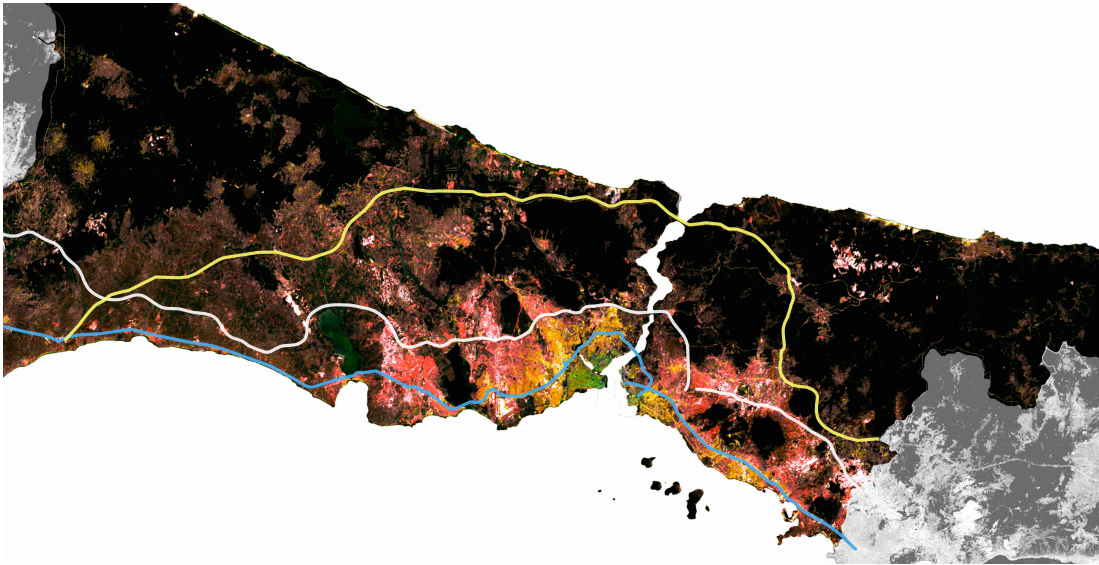


Figure 2.1: Layers of Urbanisation in Istanbul between 1946-2022
Aytek Alkaya, 2022

The map shown in Figure 2.1 was drawn aiming to illustrate Istanbul's growth and changes in the built environment over time. In order to comprehend the process carefully, several maps were used as data sources in the construction of the map. The layers of the map were shaped by data extracted from the orthophotography of Istanbul produced by Istanbul Metropolitan Municipality in

1948¹¹⁰, and the satellite views captured by NASA in 1975¹¹¹ and 2011¹¹² were blended onto the 2022¹¹³ satellite view presented by Google Maps.

Istanbul Metropolitan Municipality's orthophotography, which was produced by the collocation of geometrically corrected aerial images, was used to extract the data from Istanbul's plan in 1946. This layer in the map, which is represented by green, indicates that Fatih, Beyoğlu and Üsküdar were urban centres.

The satellite view of NASA that shows Istanbul in 1975 is represented by yellow on the map in Figure 2.1. This layer contains E5 (represented by the blue line in Figure 2.1), the first official highway in Türkiye, opened in 1975 after Bosphorus Bridge was built in 1973, joining London Road and Ankara road together. E5, as a part of the 'E' motorway network (TEM, Transit European Motorway) planned to connect European countries with the support of the United Nations Development Programme, was located outside of the urban centres surrounding the fringe. The Istanbul Master Plans constituted in 1955 and 1966 suggested locating industrial development zones along E5. The developments in the industry caused unforeseen immigration to Istanbul, leading to the construction of slums and illegal housing near the industrial development zones such as Gaziosmanpaşa, Fikirtepe, and Umraniye.¹¹⁴

The decisions declared in the Greater Istanbul Metropolitan Area Master Plan in 1980¹¹⁵ caused the legalisation of slums and justified the new residential zones morphed from illegal housing. These sub-centres placed around the industrial zones connected E5 with new roads, bringing daily traffic to the motorway E5. E5 turning into an urban highway, and planning decisions made by the United Nations

¹¹⁰ Istanbul Metropolitan Municipality, "İstanbul Şehir Haritası".

¹¹¹ NASA Earth Observatory, *Istanbul, 1975*.

¹¹² NASA Earth Observatory, *Istanbul, 2011*.

¹¹³ Google Maps, <https://www.google.com/maps>.

¹¹⁴ Kılıç, Ali, "From the Highway to an Urban Arterial Road: The Change of E-5 Corridor Planning Decisions", pp 37-45.

¹¹⁵ Küçük, Salim, and Şebnem Yüzer, "The Growth And Development Of Metropolitan Planning Strategies In Istanbul", 1998.

Economic Commission¹¹⁶ in 1975 to plan a new TEM network for Europe caused the building of a new motorway.

E80, Anatolian Motorway, represented by the white line in Figure 2.1, is inserted into the extended fringes of the urban centres. It was opened when the Fatih Sultan Mehmet Bridge's construction was completed in 1988. Due to the urbanisation of E5 and the new E80 motorway, E5 was demoted to a state highway, with its administrative responsibilities being transferred to Istanbul Metropolitan Municipality, causing it to adopt its new name of D100.

E80 caused neighbourhoods formerly defined as industrial development zones to become residential zones, creating new sub-centres and extending the boundaries of Istanbul by pushing industrial zones to Ambarlı and Dilovası, the new fringes of Istanbul as seen on the third layer of the map in Figure 2.1 represented by red.

E80 is experiencing a similar urbanisation process that happened to D100. The circulation provided by E80 caused the urbanisation of areas like Beylikdüzü, Esenyurt, Ataşehir and Kartal in the early 2000s¹¹⁷. And in return, E80 is used for daily commute between these neighbourhoods. The overcrowding of E80 led to the construction of O-7, represented by the yellow line in Figure 2.1, as a bypass to E80. O-7, the Northern Marmara Motorway, was opened gradually between 2016 and 2021. O-7 is expected to trigger the urbanisation of Sarıyer and Beykoz¹¹⁸ based on how the previous motorways affected the city.

The mapping confirms that the relationship between transportation networks and urbanisation in Istanbul highly affected each other. Highways built on the fringes of existing urban centres caused centres to grow towards and along the highways. When the capacity of existing housing and transportation becomes insufficient,

¹¹⁶ "TEM - Transport - UNECE", *Unece.Org*.

¹¹⁷ Döker, Mehmet Fatih, *İstanbul Kentsel Büyüme Sürecinin Belirlenmesi, İzlenmesi ve Modellenmesi*, Phd Thesis, 2012.

¹¹⁸ Tümerdem, Nazlı, *İstanbul Walkabouts: A Critical Walking Research of Northern Istanbul*, Phd Thesis, 2018.

another highway gets built that is used as a tool for urban growth, which became the pattern of the urbanisation process.

The introduction of the automobile and its increasingly widespread use defined the stages of Istanbul's urbanisation distinctly. The areas and neighbourhoods developed before the acceptance of the automobile as the prioritised transportation mode reflect the characteristics of the compact city, whereas the areas developed after the automobile contain the characteristics of the sprawled city. As this section illustrates transportation's role in urbanisation, how it affects the city on a closer scale is discussed in the following chapter. The circulation system, thoroughfare types and how they are formed are examined in further detail.

3. MOBILITY SPACES IN THE CITY

Every place, urban agglomeration, and city is tied to each other. The tie that connects every space can be approached as one long tether through which every space can be accessed theoretically by one continuous motion seamlessly. So, there is only one mobility space. Yet, this mobility space is fractured into smaller sections which are morphed into different forms, demonstrating variety in length, width, speed capacity, mobility modes afforded, morphology, surface material etc.

This layer of the thesis aims to explore the fractures of the mobility space. The types of them are discussed in the contexts of morphological formation, and functions in the circulation network in order to illustrate how urban movements in Istanbul are conducted.

The terms thoroughfare, road, street and highway are discussed through the common language, academic concepts, and institutionalised definitions in order to establish the lexicon in the first section. The thoroughfare types, how they are different from each other, and in what morphologies they are formed are compiled. The functions assigned to roads are discussed through the road hierarchy. Urban planning, transport engineering and administrative institutions benefit from the road hierarchy.

Architectural forms of the thoroughfares and functional hierarchy of the roads are compiled and refined to be applied to Istanbul's mobility spaces. The contradictions unfolded by the conflation of the lexical meaning, authority's descriptions and administrative employment unravelled the inconsistencies and resulted in describing D100 as the *confused road*.

3.1. THOROUGHFARE AND ROAD

The thoroughfare is the general term for all mobility spaces and ways of public travel. They provide people and vehicles movement, and they connect places together.¹¹⁹ The thoroughfare is etymologically defined as ‘way through’ and constructed by words that mean ‘from end to end’ and ‘journey’.¹²⁰ The thoroughfare is a three-dimensional architectural space that contains a road, elements that border the road, and other mobility-related structures. On the other hand, a road is a two-dimensional platform¹²¹ concerning its physical characteristics and often has an improved surface.¹²²

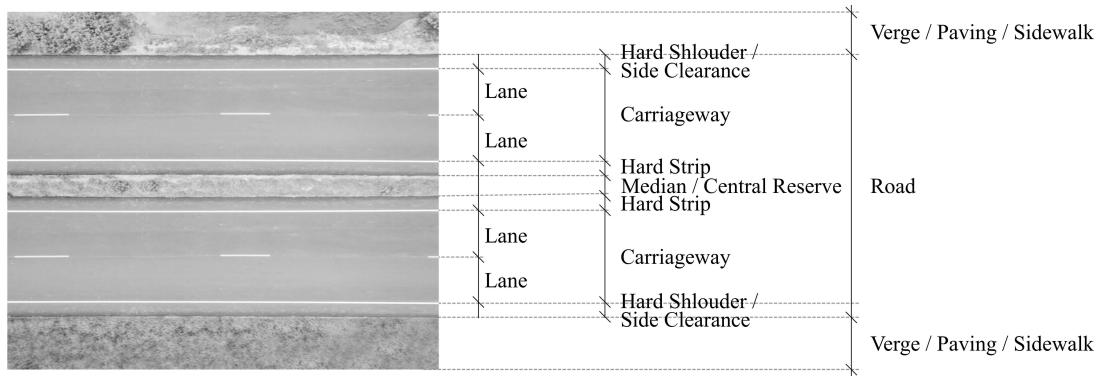


Figure 3.1: Components of Thoroughfare
Aytek Alkaya, 2022

In Figure 3.1, components of a thoroughfare are represented combined with informative texts.¹²³ The image shows a rural or inter-city thoroughfare, but the identifications apply to most thoroughfare types. Lane is the limited surface area for one line of traffic. The carriageway is the total surface of lanes. If there is only one lane, the carriageway and lane will refer to the same component. Carriageway(s) and the areas next to the carriageway (hard shoulder in highways, side clearance in streets) make up the road. The hard shoulder, hard strip, centre reverse and verge are components used for highways; side clearance, median and pavements are often seen in streets.

¹¹⁹ The Economic Times, *Definition Of 'Road Transport'*, Newspaper Article.

¹²⁰ "Thoroughfare (N.)", *Online Etymology Dictionary*.

¹²¹ Hart, Julian, *Towns and Cities: Function in Form : Urban Structures, Economics and Society*, 2021.

¹²² "Road", *Oxford Learner's Dictionaries*.

¹²³ Highways England, Transport Scotland, Llywodraeth Cymru Welsh Government and Department for Infrastructure of An Roinn Bonneagair, 'Road Layout Design' in *Design Manual for Roads and Bridges*, Report.

3.2. THOROUGHFARE TYPES

Thoroughfares are morphologically categorised as streets and highways. Streets and highways both contain roads. A thoroughfare being a highway or a street depends on whether the road is surrounded and bounded by buildings. When a road is bordered by buildings (solids), it becomes a street. It becomes a highway when buildings do not define the road but has their defining edges (the greys).

The study of Morphology focuses on the formation of urban areas and the large scale construction of settlements. It extracts information about the configuration and organisation of elements, street connectivity, the hierarchy of forms and the proportion of public open spaces.¹²⁴ Morphology often benefits from Solid/Void analysis, an analysis method of representing built and unbuilt spaces by rendering them black and white. The solid/void analysis, also referred to as figure/ground, emphasises the silhouette of the formation and presents the urban pattern. The solid/void technique uses Gestalt principles¹²⁵ which are shape, form, configuration, proximity, closure, and alignment.

The built elements are represented as heavier masses with definite extents, while the voids are perceived as background, being carved out by the removal or lacking solids. Solids, the designed, define the voids by their presence in both two-dimensional graphic representations and patterns of three-dimensional cities. Voids are the unbuilt, untouched components. Any void or emptiness requires a limit or a boundary to be defined that can only be created by solids.

In cities, the voids are encountered as open spaces such as roads, parks, and squares. These places are where mobility, recreation, engagement, and socialisation occur. The urbanisation types, which are categorised as compact and sprawled earlier, show differences in terms of prioritising the formation of solids and voids. In compact morphologies, solids are prioritised and used as the tool to define both

¹²⁴ Kropf, Karl, *The Handbook Of Urban Morphology*, 2017.

¹²⁵ Günay, Baykan, "Gestalt Theory and City Planning Education", 2007, pp. 93-113.

solids and voids. The placements of solids also determine the shapes and location of the voids. As there is no middle agency, they define each other and work relationally, producing streets as circulation spaces.

In sprawled morphologies, voids are defined independently from the solids. They have their own boundary defining elements. The infrastructures are not buildings, yet they are still solids. Therefore they are perceived almost as grey as the third colour on solid/void relation, drawing highways as designed mobility spaces rather than formed organically.

Streets and highways are the two essential thoroughfare types. As mentioned earlier, the thoroughfare type is designated on how the road is physically morphed. Streets have roads shaped in the voids of urban morphologies. Highways are built for inter-city travels in any morphology or formed to provide roads in urban settlements with sprawled morphologies. Streets and highways are discussed in more detail in the following sections.

3.2.1. The Street

A street is defined as a road in a city or town that has buildings on its sides.¹²⁶ As explained through illustrations earlier, the road is the two-dimensional surface that offers traffic. The road makes up the horizontal floor of the street, which is a three-dimensional architectural space defined by both horizontal and vertical boundaries. The buildings and other elements that define vertical components provide the enclosure that is a condition for a street. Streets provide direct access to buildings.

¹²⁶ “Street”, *Cambridge Dictionary*.



Figure 3.2: Street Types
Google Maps

Boulevards, avenues, local streets and cul-de-sacs are street types that are identified by the street hierarchy according to certain parameters such as single or dual carriageway¹²⁷, having plants on the sides¹²⁸, providing street parking for cars¹²⁹, accommodating public transportation, the capacity of vehicular traffic.¹³⁰ In Figure 3.2, Tarlabası Boulevard, Moda Avenue, İskele Street and Şifa street are presented as examples of boulevards, avenues, local streets and cul-de-sacs, respectively.

There are many attempts by scholars who study cities to measure the experience in urban spaces and define standards for “good” public space. Walkability, Human Scale, and Urban Design Parameters work on the voids of urban patterns, and all suggest quantifiable data. Gordon Cullen¹³¹ mentions scale, enclosure, vistas, serial visions and more while talking about measures on relationships of elements that create environments. Jan Gehl¹³² breaks down the movement and experience of people in built environments and defines them by

¹²⁷ Bradford City, ‘Proposed Street Hierarchy’, map.

¹²⁸ Nelson, Dustin, “What’s The Difference Between Streets, Lanes, Avenues, And Other Roads?”, Website Article, 2016.

¹²⁹ City of Flagstaff, *Thoroughfare Types*, 2011.

¹³⁰ Law Insider, “Local Street Definition”, Website Article.

¹³¹ Cullen, Gordon, *The Concise Townscape*, 2006.

¹³² Gehl, Jan, *Life Between Buildings*, 2011.

numerical data aiming to evaluate the quality of the physical environment. Allan B. Jacobs¹³³ gathers physical designable characteristics for public spaces by examining “great” streets in order to discuss streets in creating communities. Amos Rapoport¹³⁴ talks about complexity as a perceptual characteristic of pedestrian streets in his studies that are purposed to generalise environmental design theories for humane environments.

The scholarly works mentioned above suggest more connectivity in streets, smaller building islands, enclosed circulation spaces, higher complexity, more stimulation, more integration and diverse land use. Although the aim of rendering out the criteria to create good public spaces in quantifying methods reduces the spatial experience to physical components in a strict way, it might give hints about what components there are in public space design. Reid Ewing and Otto Clemente¹³⁵ compile fifty-one urban design qualities (texture, openness, imageability, linkage, coherence, etc.) from the literature, aiming to measure urban design and present the metrics for livable places. Enclosure, Human Scale, and Complexity among these fifty-one qualities of the built environment are the ones that are the most related to the experience of being in a space and being mobile. The enclosure is about how well defined the borders of a street space are. When the street has a corridor-like shape, it has a high enclosure. One of the Human Scale matters is to have proportions for streets that would match the size of humans. It offers shorter and narrower street spaces for walking bodies. The complexity is about the variety of changes on the street and the number of stimulation generators. It is the changes in the scenes while walking. This issue is elaborated on in more detail in the following chapters of this dissertation. Enclosure, Human Scale and Complexity draw street networks that are shaped in the forms of small building islands, are three-dimensionally enclosed by vertical boundaries and offer higher stimulation.

¹³³ Jacobs, Allan B, *Great Streets*, 1993.

¹³⁴ Rapoport, Amos, *History And Precedent In Environmental Design*, 1990.

¹³⁵ Ewing, Reid, and Otto Clemente, *Measuring Urban Design: Metrics For Livable Places*, 2013.

The street facilitates various social activities and bodily movements. Paddlers, street vendors, musicians, animals etc., use the same channel, allowing them to mix freely.¹³⁶ The street is a ‘meshwork’ of traces left by people whose lifelines are entangled.¹³⁷ Streets are human spaces as they allow dynamic and static movements and activities pedestrians do.¹³⁸

3.2.2. The Highway

A highway is defined as a direct¹³⁹ and public road that joins cities or towns together.¹⁴⁰ The General Directorate of Highways¹⁴¹ categorises highways as motorways, state highways and provincial roads, which are respectively explained through images of Northern Marmara Motorway, Anatolian Motorway, Alemdağ-Şile Highway and Samandıra-Kartal Provincial Connection Road in Figure 3.3.



Figure 3.3.: Highway Types
Google Maps.

¹³⁶ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

¹³⁷ Bates, Charlotte, “Desire Lines”, 2017, pp 55-69.

¹³⁸ Rapoport, Amos, *History And Precedent In Environmental Design*, 1990.

¹³⁹ “Highway”, *Merriem-Webster Dictionary*.

¹⁴⁰ “Highway”, *Cambridge Dictionary*.

¹⁴¹ The Directorate of Highways, *Road Network*.

Motorways are access-controlled highways aiming travels at higher speeds. They are often used by people who want to bypass the places that the motorway goes through and just arrive at the destination. They don't offer movements within cities. Pedestrians and slower vehicles such as bicycles and agricultural vehicles are not allowed on motorways.¹⁴² Motorways often require toll payment. They are named starting with 'O', which is the initial of the term 'otoyol' (motorway).

State highways constitute the main roads¹⁴³ within and between cities. They are identified by the 'D' naming system, which stands for 'devlet karayolu' (state highway). State highways have the purpose of moving people and goods nationwide.¹⁴⁴ They circulate through cities, towns and important transportation infrastructures such as airports and major train stations. Provincial roads are highways that provide connections between districts, provinces, neighbourhoods, and state roads in cities.¹⁴⁵ They function as secondary roads to state roads. Provincial roads are collectors that carry the local traffic to arterials or primary routes. They take the names according to the licence plate code of the city they are located.

Highways are the products of the automobile, which became common in the early 20th century by Henry Ford's production techniques¹⁴⁶, and the city is significantly transformed by the flows of traffic generated by the automobile.¹⁴⁷ The process of urban sprawl locates buildings as isolated objects in sites rather than placing them into a larger fabric or pattern.¹⁴⁸ The scale of space and movement on the highway is related to the larger distances between buildings which can be traversed at higher speeds.¹⁴⁹

¹⁴² Department of Transport, UK, *Motorways, The Highway Code*, Report, 2022.

¹⁴³ 'State highway', *The Free Dictionary*.

¹⁴⁴ New Zealand Transport Agency, *State Highway Frequently Asked Questions*, Website Article.

¹⁴⁵ TremGlobal, "Highways In Istanbul", Website Article, 2021.

¹⁴⁶ Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack, *The Geography Of Transport Systems*, 2013.

¹⁴⁷ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

¹⁴⁸ Trancik, Roger, "What is Lost Space", 1986, pp.63-69.

¹⁴⁹ Venturi, Robert, Denise Scott Brown, and Steven Izenour, *Learning From Las Vegas*, 1977.

Higher speeds require less distraction, which larger, less crowded, and less stimulating spaces can provide. How fast you can drive through spaces became a criterion in measuring the quality of public spaces.¹⁵⁰ The fractal and interweaved urban patterns caused inconveniences. Highways require the opposite of what the literature defined as a “good” street space, where streets also were approached as places. With humans becoming the automobile¹⁵¹, the scale is redefined as the automobile scale, where the sizes and movement capacities are larger. The complexity set for walking bodies is distracting for the automobile. The amount of complexity is significantly lowered to produce less stimulating spaces. All three of Enclosure, Human Scale and Complexity became irrelevant. The enclosure is needed to be increased to define automobile spaces and separate them from neighbourhoods with mixed land use.

The emphasis on the faster movement caused erosion of the social functions of the streets. Streets became spaces for only getting from A to B, rather than being places to live in. According to the modernists like Le Corbusier, the sacrifice of traditional activities and socialising was a price worth paying to have successful streets that are made for speed.¹⁵² Public spaces became motion corridors when stripped of the attractions that people can engage in. Affording movement became their only function with inserted ramps, overpasses, bridges, roundabouts, etc.¹⁵³ The accelerated movement demolishes the sense of place. Therefore, spaces of speed are accused of ‘never being true places’. The highway and other car-only environments built for pure motion are accused of being non-places.^{154,155}

¹⁵⁰ Sennett, Richard, *Ten Ve Tas*, 2018.

¹⁵¹ Hall, Edward Twitchell, *The Hidden Dimension*, 1990.

¹⁵² Spinney, Justin, "Transitions: Methodology And The Marginalisation Of Experience In Transport Practice", 2020, pp. 265-277.

¹⁵³ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

¹⁵⁴ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

¹⁵⁵ Augé, Marc, *Non-Places: Introduction to an Anthropology of Supermodernity*, 2006.

Great distances between buildings and highways affect the pattern morphologically to form large and impersonal outdoor spaces. The condition of outdoor stays near the buildings is poor in these patterns. Public spaces do not offer much to experience, and the few activities are spread out in time and space.¹⁵⁶ This formation of public spaces challenges designers to create collective, unifying urban environments. The designer's intervention becomes an 'after-fact cosmetic treatment' for ill-shaped spaces. The two-dimensional decisions for land-use plans create spaces without a fundamental understanding of human behaviour and without considering scale, shape, and interconnection properties. This process is accused of producing unshaped 'anti-spaces'.¹⁵⁷

3.2.3. Highways and Streets

Streets and highways have the same fundamental purpose of providing access.¹⁵⁸ The main difference between them is that the circulation is not the only function of streets,^{159,160} they are the main public spaces of the city¹⁶¹. They allow people to interact.^{162,163} The reason for this difference is that the streets are formed by buildings. Movement is designed in and around buildings like weaving with threads.¹⁶⁴

Spaces need to offer attractive qualities for people to stay in them when desired. Carefully defined physical components and accommodation of other people create stimulation in terms of complexity and socialisation. Such qualities produce places where people would be embedded in and engaged with. People make sense of spaces and connect with them through bodily engagement, practice and experience.

¹⁵⁶ Gehl, Jan, *Life Between Buildings*, 2011.

¹⁵⁷ Trancik, Roger, "What is Lost Space", 1986, pp.63-69.

¹⁵⁸ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

¹⁵⁹ Jacobs, Jane, *The Death And Life Of Great American Cities*, 1961.

¹⁶⁰ Lefebvre, Henri, *The Urban Revolution*, 2006.

¹⁶¹ Jacobs, Jane, *The Death And Life Of Great American Cities*, 1961.

¹⁶² "Street vs Road", *Woodward English*.

¹⁶³ Madanipour, Ali, "A Critique of Public Space: Between Interaction and Attraction", 2020, pp 7-15.

¹⁶⁴ Anderson, Benedict, *The City In Transgression*, 2021.

The highway and spaces formed accordingly do not offer these stimulations and the possibility for bodily engagement as they are built for automobiles. The ways in which the automobile-centric spaces do not offer a variety of experiences for bodily movement are examined in the following chapters in further detail through in-situ data.

Such precise separation between streets and highways does not reflect how circulation spaces are implemented in daily mobility practices in Istanbul. Urbanised highways contribute to carrying the daily traffic load as a part of the thoroughfare network intertwined with streets. Thoroughfares are altered when adjoined with other types, and the features that determine their institutionalised definitions are smoothened at the thresholds.

3.3. MOBILITY SPACES IN ISTANBUL

The thoroughfare type of urban areas is formed according to their morphologies, as the morphology determines the distances between places and possibilities of how to access them. As elaborated earlier, compact morphologies produce streets while sprawled morphologies produce highways. Istanbul, as a city that shows characteristics of compact and sprawled morphologies, contains both streets and highways. Components of these streets and highways, which are categorised as boulevards, avenues, local streets; motorways, state highways and provincial roads, shape the overlapping layers of mobility spaces in Istanbul.

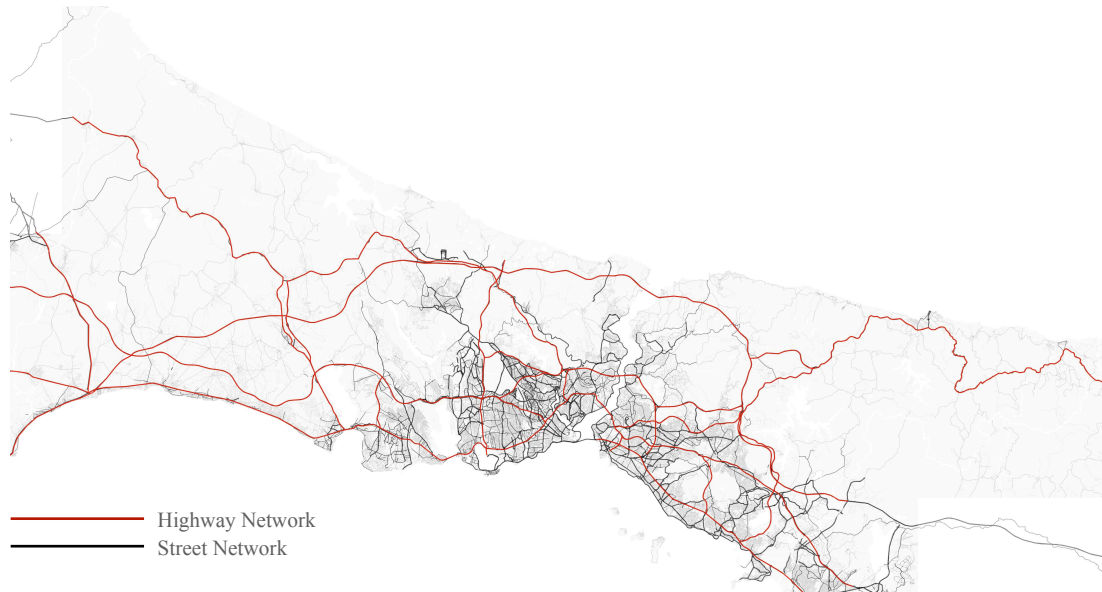


Figure 3.4: Street and Highway Networks in Istanbul
Aytek Alkaya, 2022

The map in Figure 3.4 was drawn from data collected from separate maps to represent highway and street networks. The base map is borrowed from Map Box¹⁶⁵ because it is the only digital map that shows local streets, unlike other digital maps, which hide information when the map is zoomed out. Black lines on the map represent the streets. The information provided by Istanbul Şehir Haritası¹⁶⁶ is adopted in the drawing of the highway network, which is represented by red lines on the map.

In order to understand how street network and highway network adjoin, the road hierarchy is adopted or examine Istanbul's mobility spaces. The hierarchy of roads is a categorisation system developed to understand, plan and administer roads according to their function in circulating movements for the purpose of seamless mobility. The term 'road type' refers to the construction material and surface finishes of the roads, such as asphaltic concrete, stone block etc.¹⁶⁷ Therefore the functions of the roads are referred to as categories, and they are classified according to a hierarchal system as they are responsible for affording various traffic loads.

¹⁶⁵ Map Box, *Studio*, Digital Map.

¹⁶⁶ Istanbul Metropolitan Municipality, *İstanbul Şehir Haritası*, Digital Map.

¹⁶⁷ The Directorate of Highways, *Road Network*.

The hierarchy of roads includes the ranks of arterial, collector and local. Local roads give access to places individually. They are branches and alternated. Collectors collect the movement from the locals and transmit it to the arteries, which provide movement in further distances. Arteries are more direct, and their number is less than the other in a circulation system.

The classification of road hierarchy is redefined in various alternatives based on the characteristics of the circulation system discussed. Some of the road hierarchy alternatives have more detailed categories as minor arteries or major collectors, etc. Certain adaptations are listed below:

- Primary arterial, secondary arterial, collector, local¹⁶⁸;
- Arteries (primary), collectors (secondary), access roads (tertiary)¹⁶⁹;
- Motorways, major roads, regional roads, minor roads¹⁷⁰;
- Highway, arterial, distributor, collector, local¹⁷¹;
- Freeway, Arterial, Collector, Local¹⁷²;
- Arterial, Collector, Local¹⁷³;
- Freeway, Expressway, Highway, Arterial, Local Street, Collector Street,¹⁷⁴
- Arterial, Major Collector, Minor Collector, Local Street.¹⁷⁵

In order to have one comprehensive classification that later can be used to evaluate the mobility spaces in Istanbul is suggested, containing the categories of Express, Arterial, Major Collector, Minor Collector, Major Local and Minor Local, and represented in Figure 3.5.

¹⁶⁸ Yoldaş, Mustafa Alptekin, *Karayollarında Yol Sınıflandırması ve Tıp Enketlerinin İncelenmesi: Eminönü-Fatih Örneği*, Thesis, 2008.

¹⁶⁹ Şanlı, Tuğçe, "Kentsel Ulaşım, Ulaşım Planlaması 2". Presentation.

¹⁷⁰ Department for Transport, UK, *Guidance on road classification and the primary route network*, Report, 13.03.2021.

¹⁷¹ Eppell, Tony, Brett McClurg, and Jonathan Bunker, 'A Four Level Road Hierarchy for Network Planning and Management' 2001.

¹⁷² Congress for the New Urbanism, 'Street Networks 101'.

¹⁷³ 'Access Management', Image, in Mike Spack, *The Dos and Don'ts of Access Management*, Website Article,

¹⁷⁴ 'The Hierarchy of Roads', Image, 2004, in Wikipedia, *Road Hierarchy*, Website Article.

¹⁷⁵ *A Nested Hierarchy of Roads*, Image.

Degree of Circulation	Primary		Secondary		Tertiary	
Road Hierarchy	Express	Arterial	Major Collector	Minor Collector	Major Local	Minor Local
Speed of Movement	Faster Speed					Slower Speed
Network Branching	Less Routes					More Routes

Figure 3.5: Thoroughfare Hierarchy
Aytek Alkaya, 2022

Motorways are excluded from the road hierarchy by being assigned to a separate category, which is called express roads. They are classified as special roads because they are bypass roads, aiming to provide seamless travel to further places rather than contributing to the circulation network they are located in. Their speed limits, controlled entrance/exit points and toll payment prevent them from being components of urban road systems. Certain state highways can also be classified in this category when they are employed to connect places in different cities or regions.

Express roads also bypass the urban road system physically, as discussed in the previous chapter. They are not adjoined with the other roads and are embodied to the urban pattern, which often makes express roads intersect the road network.



Figure 3.6: Morphology of Intersecting Thoroughfares
Aytek Alkaya, 2022

Figure 3.6 shows an intersection of a motorway and an artery. Two maps of 3001. Avenue, which is on the border of Ümraniye and Ataşehir, from 1982 and 2022,¹⁷⁶ are overlapped. The elevated motorway was built on top of an existing road network, dividing the neighbourhood into two parts. Underneath the O-4 motorway, the old pattern of the city is seen. The connection between the two parts of the neighbourhood is achieved by a bridge that goes above the motorway.

Speed is prioritised in travel. Arriving places quickly is approached as a blessing of the technology. The automobile and motorways are the products of technological advancement in movements that accelerate and provide faster travel. As discussed through morphology in previous sections, building a motorway is not part of the organic growth of cities. Their plumped-down placements leave vestigial scarps on cities' geographies where intertwined movements and patterns are prevented. The following section examines Istanbul's highway network in more depth, aiming to document their relationships in tandem with each other and in relation to the environment.

3.3.1. Highways in Istanbul

Highways in Istanbul are discussed in the chapter, the Mobility City, in terms of transportation's influence on urbanisation. It is also discussed in the section, The Highway, according to its architectural features, its formation in morphology and its types. In this section, the highways are mapped out in Istanbul to examine their identification, function and administrative organisations.

¹⁷⁶ Istanbul Metropolitan Municipality, *İstanbul Şehir Haritası*, Digital Map.

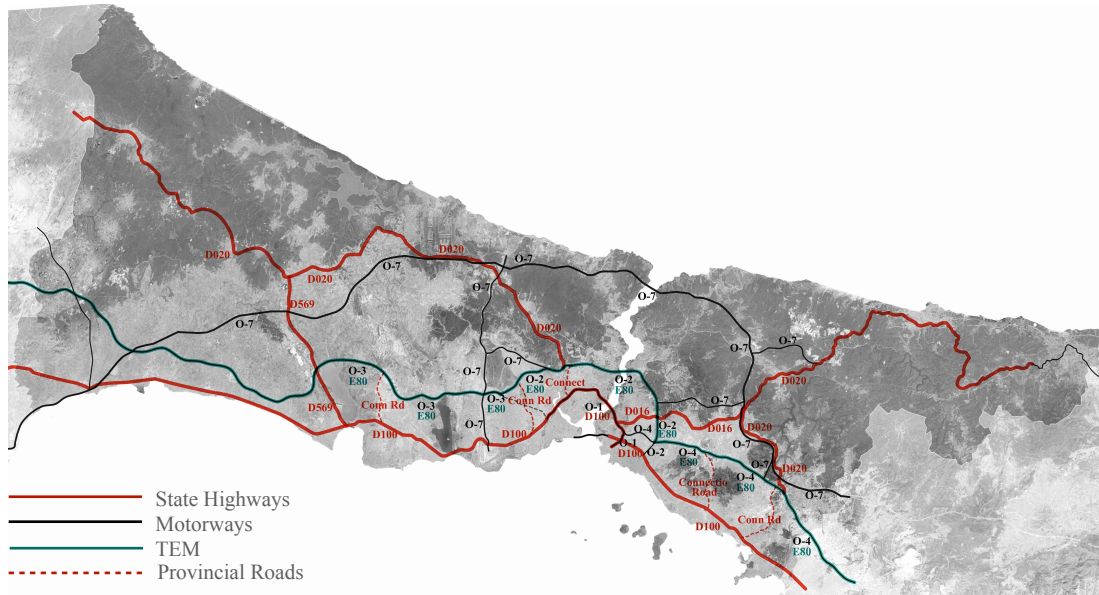


Figure 3.7: Highways in Istanbul
Aytek Alkaya, 2022

The highway types explained through photographs earlier are presented here as a system, in Figure 3.7. “O” roads as motorways are represented in black. The “E” sections of the motorway forming TEM are represented by green. Red lines represent state highways with “D” names, and red dashed lines represent provincial roads.

The types mentioned in the legend are based on the formal descriptions of the General Directorate of Highways¹⁷⁷. Two-dimensional plan views of the highways are based on the information from Google Maps¹⁷⁸, İstanbul Şehir Haritası¹⁷⁹, and spatial accessibility map drawn by depth-map¹⁸⁰. The conflation of maps to draw the routes of highway networks revealed the conflict about D100’s classification. This conflict that is caused by different suggestions of the maps for the identification and classification of D100 is discussed in more detail in the following section.

¹⁷⁷ The Directorate of Highways, *Road Network*.

¹⁷⁸ Google Maps, *İstanbul*, Digital Map, 2022.

¹⁷⁹ İstanbul Metropolitan Municipality, “İstanbul Şehir Haritası”, Digital Map.

¹⁸⁰ Stoner, Tim, “İstanbul Spatial Accessibility”, Map, 2014.

3.3.2. D100

D100 was built in the early 1970s as a motorway aiming to both provide the connection between Istanbul and Ankara and to be a part of the international motorway network called TEM. As discussed through its influence on Istanbul's urbanisation previously, it became a state highway when the O-2 motorway (the second beltway, Anatolian motorway) was built, also being employed by the TEM.

The conflict, which was encountered during the attempts to gather data from different maps to draw a comprehensive highway network map, revealed that the section of D100 on the Anatolian side of Istanbul is not a state highway anymore but an artery. Boulevard and avenue types of streets are often classified as arteries, as discussed in context of road hierarchy in previous sections. Therefore it is quite interesting for a section of D100 to be categorised as an artery.

In order to confirm the conflict, a further investigation was conducted through maps. Maps showing the section of D100 on the Anatolian side of Istanbul from Google Maps¹⁸¹, Yandex Maps¹⁸², MapBox¹⁸³, Istanbul Şehir Haritası¹⁸⁴ (digital map by Istanbul Metropolitan Municipality), the General Directorate of Highways¹⁸⁵ and Artery map of Istanbul Şehir Haritası¹⁸⁶ were compiled which is presented in Figure 3.8.

¹⁸¹ Google Maps, *İstanbul*, Digital Map, 2022.

¹⁸² Yandex Maps, *Sancaktepe*, Digital Map.

¹⁸³ Map Box, *Uzunçayır*, Digital Map.

¹⁸⁴ Istanbul Metropolitan Municipality, *İstanbul Şehir Haritası*, Digital Map.

¹⁸⁵ The Directorate of Highways, *Road Network*.

¹⁸⁶ Istanbul Metropolitan Municipality, *İstanbul Şehir Haritası*, Digital Map.

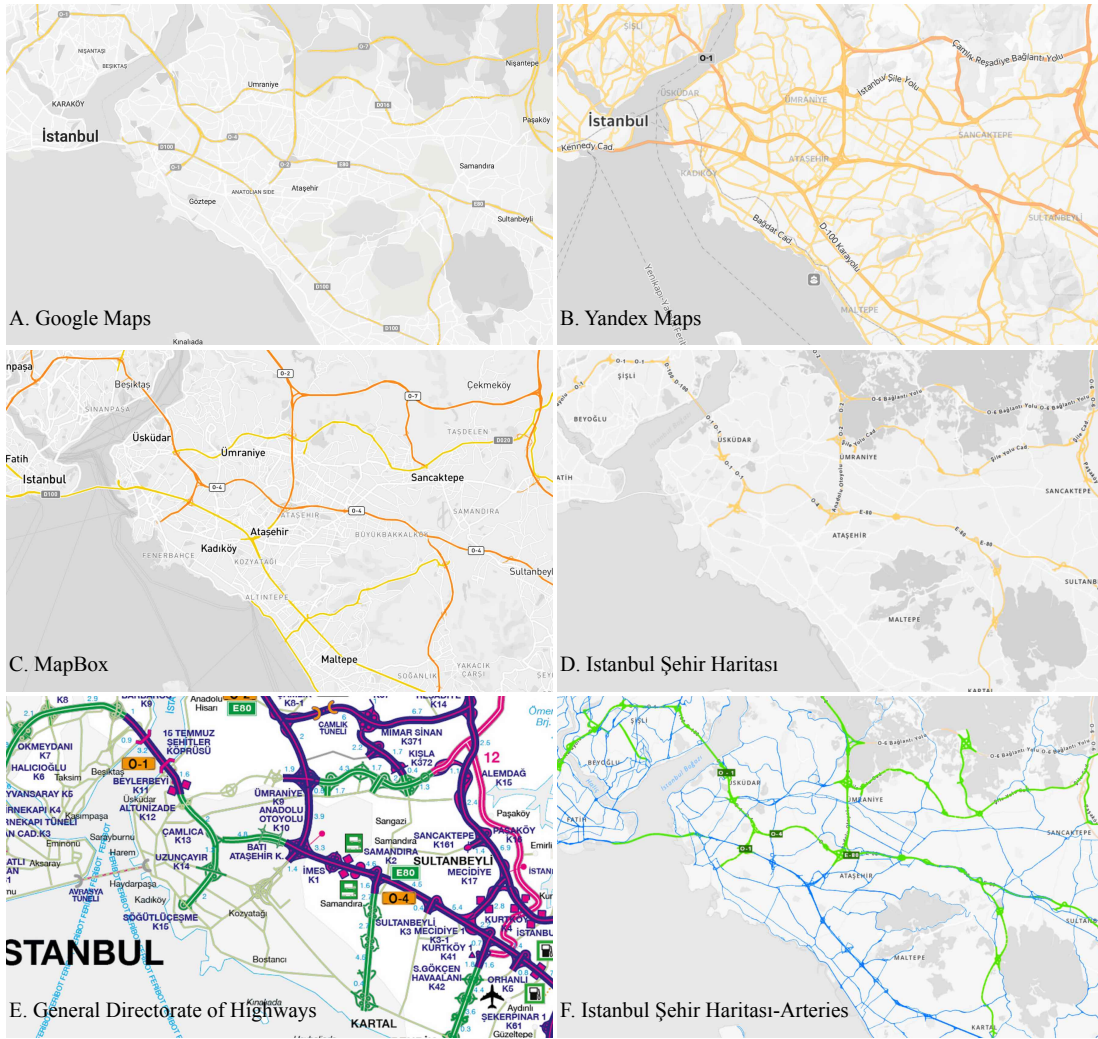


Figure 3.8: D100 the Artery
Aytek Alkaya, 2022

The maps were black-and-whitened to emphasise the roads which are kept in their original colourings. Google Maps and Yandex Maps identify D100 as a highway and represent it in yellow, which also represents motorways. MapBox represents D100 as a highway but separates it from the motorway network. Istanbul Şehir Haritası of Istanbul Metropolitan Municipality doesn't represent D100 as a primary road, although it identifies D100 as a highway. The highway network map published by the General Directorate of Highways categorises D100 as a highway except for the section on the Anatolian side which is categorised as 'other roads'. The arteries layer of Istanbul Şehir Haritası reveals that the section of D100 between Harem and Tuzla is identified as a highway, yet categorised as an artery.

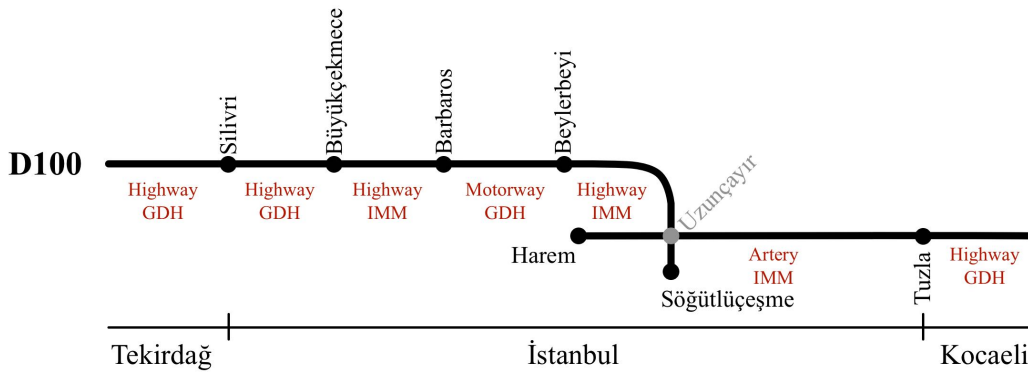


Figure 3.9: Diagrammatic Map of D100
Aytek Alkaya, 2022

A diagrammatic map was drawn to understand the manifold identifications of D100, shown in Figure 3.9. D100 is divided into five sections in Istanbul. It is identified as a highway, managed by the General Directorate of Highways (GDH) between Silivri and Büyükçekmece as it is in any other section except Istanbul. The section between Büyükçekmece and Barbaros (Beşiktaş) is still a highway, but it is managed by Istanbul Metropolitan Municipality (IMM). 15 Temmuz Şehitler Bridge between Barbaros and Beylerbeyi is a motorway managed by the GDH. This section is also identified as the O-1 (First Beltway), and it requires a toll payment. The section between Beylerbeyi and Söğütlüçeşme is categorised as a highway and managed by IMM. Although it continues as a path, the road ends in Söğütlüçeşme. The rest of D100 that intersects this section starts in Harem. The section between Harem and Tuzla is identified as an artery managed by IMM. The following section beginning with Tuzla and connecting Istanbul to Ankara becomes a highway again and is managed by GDH.

As discussed earlier, Istanbul has walkable compact morphologies in areas urbanised before the 1950s. These centres and regions are connected by highways. The urban sprawl shaped the recently urbanised neighbourhoods along the highway. Urbanisation encompassing D100 caused it to be used for daily travels and transformed it into an urban highway. Although D100 hasn't been a motorway since the 1980s, it still provides movement between Edirne and Ağrı across Turkey and keeps its original physical form as a motorway. The motorways are built purified

from any frictions for seamless mobility including slower vehicles, animals and pedestrians. After 2000's, further urbanisation of D100 brought public transportation to the late motorway, triggering pedestrianisation.

Urbanisation, *arterialisation* and pedestrianisation of D100 require research on a closer scale. As Figure 3.9 shows Uzunçayır holds a unique position as accommodation and intersection D100, the highway, and D100, the artery. The intersections involving a motorway are often organised via bridges or junctions. Uzunçayır accommodates the largest grade-separated junction¹⁸⁷ in Istanbul as it intersects two motorway sized roads. Also it is an ideal field to observe pedestrianisation as it offers several public transportation modes. Further discussions about D100, highways and *arterialisation* are studied through Uzunçayır, in the following sections.

3.4. ARTERIALISATION OF D100

D100 is not a continues highway. It is fractured and have two segments as represented in Figure 3.8. These two segments of D100 which is a 1762 km road between Edirne and Ağrı intersect in Uzunçayır. This intersecting sections of D100 are also unusual in terms of their road classifications as the highway section contains 15 Temmuz Şehitleri Bridge which is managed as a motorway with toll payment, and the other section is the only segment of D100 in Turkey that is managed as an artery. The intersection of the roads are shown in Figure 3.10.

These two unique conflicts make Uzunçayır an essential location when the intersection is aimed to be studied. Uzunçayır also accommodates the intersection of public transportation modes of metro and the Metrobus which run on the artery section and the highway (including motorway) section, respectively among other public transportation modes.

¹⁸⁷ AA, "Kadıköy'de Uzunçayır Kavşağı Viyadük İnşaatı", News Article, 2019.



Figure 3.10: Intersection of D100, the Highway and D100, the Artery
Aytok Alkaya, 2022

Motorways are motion trails. They priorities speed. Movement desires frictionless conditions to preserve higher speeds. Large lines, direct axes, more carriageways are encouraged to achieve higher speeds. Any access road connection, traffic lights, pedestrian crossing are obstacles that slow down the motion. Therefore motorways are formed isolated and purified from these frictions. The isolation provided by less connectivity and structures like barriers, prevent motorways being accessed by neighbouring traffic.

On the other hand, arteries are connection points of traffic loads. Several local movement are collected and led to arteries. They accommodate several movement types and many movement behaviours such as parking, pausing, etc. They contain public transportation, pedestrians, bikes, trees and programs as they are often streets enclosed by buildings.

D100 has the features of a motorway. So, its *arterialisation* requires connections to other roads, public transportation, carparks as *the mobility mode converters* between driving and walking, and pedestrians. The arterialisation process of Uzunçayır are explained through images in the rest of this section.

The branching of the network and connecting other roads to highways are provided through additional infrastructural elements. As turning slows down the automobile, these additional infrastructures are designed in the sizes according to the manoeuvre ability of the automobile without losing speed.

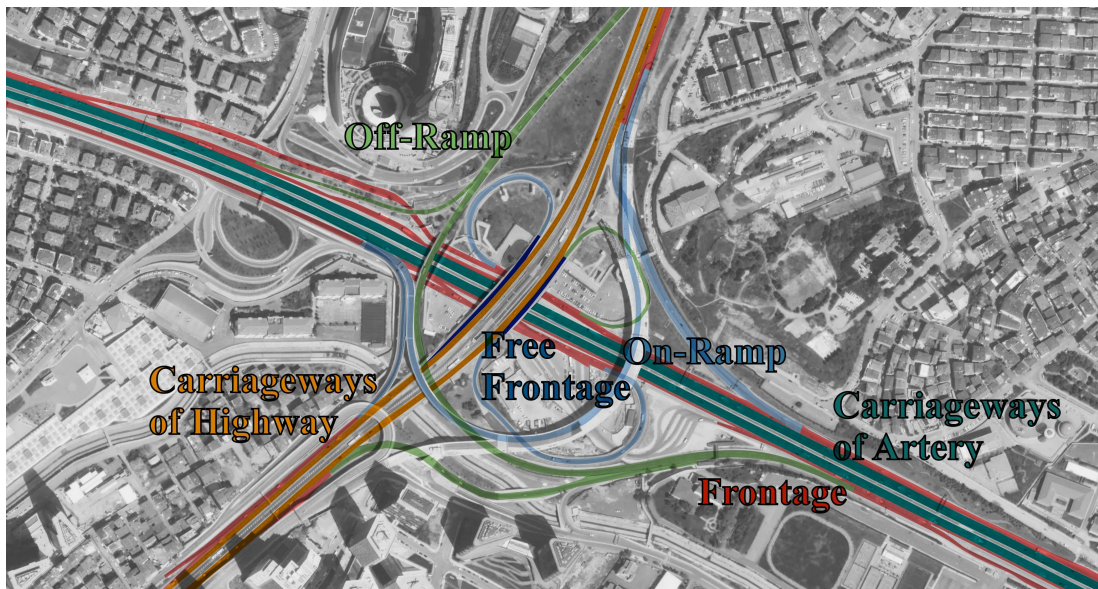


Figure 3.11: Uzunçayır Grade Separated Junction
Aytek Alkaya, 2022

The main structure in Figure 3.11 is called a junction. This is a grade-separated junction because several thoroughfares intersect on different levels.¹⁸⁸ As the intersection of the main thoroughfares are regulated by the elevated structure, other roads are tethered to the junction by interchanges which are on-ramps and off-ramps as represented in Figure 3.11. On-ramps carry vehicles from a secondary thoroughfare to a primary thoroughfare. They are also called acceleration lanes because vehicles need to speed up while connecting to the primary road¹⁸⁹. The

¹⁸⁸ The Constructor, *Types of Grade Separation*, Website Article.

¹⁸⁹ The Construction Index, *Fatal crash prompts fast-tracking of \$30m Australian motorway scheme*, News Article, 12.06.2019.

merge lanes that vehicles use to exit the primary thoroughfare are called off-ramps which are also called deceleration lanes.¹⁹⁰ The straightened lane between two ramps becomes an additional lane (outer lane) to the main carriageway. This lane is called frontage (also referred to as service roads or access roads)¹⁹¹. The frontages are separated from the main carriageways, and they function as local arteries that provide access to the buildings near the primary thoroughfare.

As the form of motorways are designed to avoid interruption, other roads can only be connected via on-ramps and off-ramps. Therefore D100, the highway and D100, the artery, never physically intersect, yet they are linked through supporting infrastructure. The space that is left from the manoeuvre of the automobile are employed to accommodate other requirements of being an artery which are public transportation stations, mobility mode converter car parks and pedestrians.

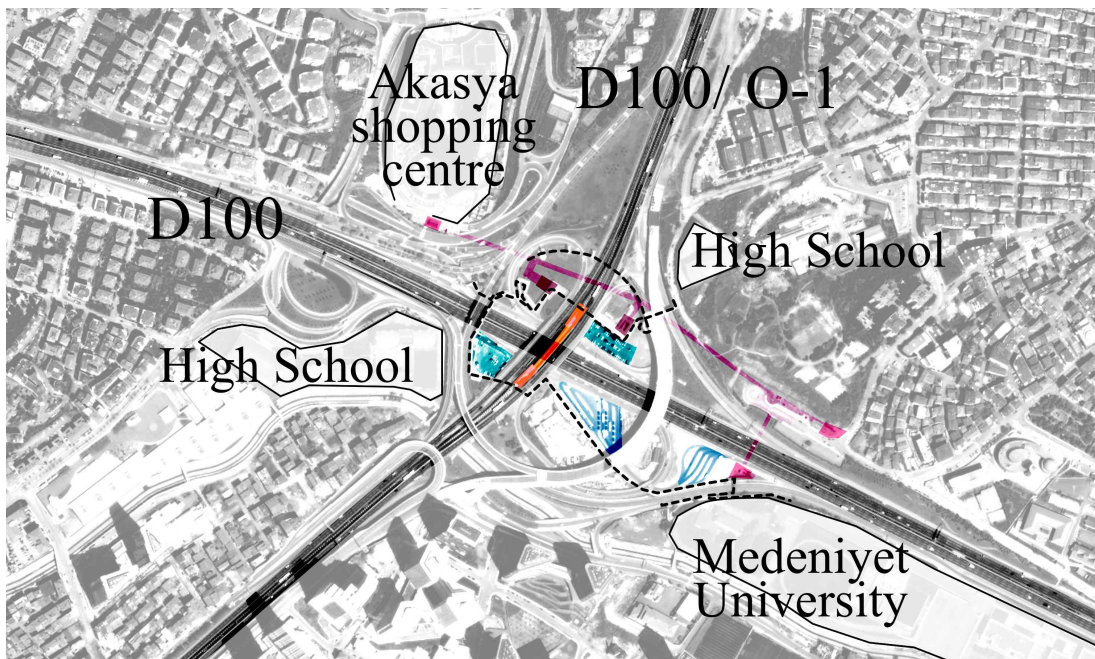


Figure 3.12: Arterialisation of Uzunçayır Junction
Aytek Alkaya, 2022.

¹⁹⁰ The Cape Coral Police Department, *How to Properly Use a Merge Lane to Get into Traffic*, Website Article, 03.09.2018.

¹⁹¹ Lord, Dominique, and James A. Bonneson, "Development Of Accident Modification Factors For Rural Frontage Road Segments In Texas", 2007, pp. 20-27.

Although the Metrobus is located on the highway D100 and metro is embedded under the D100 artery, their stations and entrances are located on the berth spaces between manoeuvre the roads.

Figure 3.12 shows the mapping of the pedestrianisation of the Uzunçayır junction. D100, the highway (including O-1) and D100, the artery are darkened. Public transportation justifies and increases pedestrians in Uzunçayır. It is one of the most important public transportation hubs in Istanbul as it connects several modes. The colour fuchsia represents the Kadıköy-Tavşantepe metro, as the surfaces are the station entrances and the linear routes are the underground path. The red and orange highlight the Metrobus that is aligned to the D100 highway incorporated in the Silivri-Söğütlüçeşme axis. The blue areas are the recently built bus and minibus ranks.¹⁹² The green areas are car parks that were built to contribute to the system called the ‘park and ride’¹⁹³. Park and ride system allows passengers to leave their cars in the car park located near the public transportation stations and encourage them to continue travelling using public transportation. They are referred to in this research as *mobility mode converters*.

The black dotted network represents the pedestrian pathways and pedestrian separation structures such as overpasses (footbridges), underpasses (subways) and underbridges which are the tunnel-shaped passages on ground level. The pedestrian traffic in Uzunçayır is caused by the changes between public transportation modes and also generated by the facilities in the area which also become landmarks, which are Akasya shopping centre, Kadıköy Imam Hatip High School, Çamlıca Imam Hatip High School and Medeniyet University. These buildings are lightened and contoured with black lines in Figure 3.10. Also, urban regeneration in fikirtepe highly affected the recognition and pedestrianisation of Uzunçayır.

¹⁹² AA, *Uzunçayır IETT Peron Alanı Hizmete Girdi*, New Article, 24.02.2017.

¹⁹³ Istanbul Metropolitan Municipality, ‘Park Et Devam Et Otoparkları’, Website Article,

The section of D100 between Harem and Tuzla is employed and managed by an artery by the additions of public transportation and pedestrians. Uzunçayır appears putatively as an artery from a distance. Yet, pedestrians are still not allowed on the main carriageways of D100. It is an access-controlled and isolated road where speed is prioritised which are features of motorways. This places D100 in Uzunçayır a *confused road*.

These pedestrian originating and pedestrian accommodating additions in Uzunçayır rationalise D100 being an artery. It shows characteristics contradicting the definition of the motorway. Motorways are often preserved from the urbanisation and they are not employed to accommodate other mobility modes such as walking, as they are accepted as the motion vectors that divide urban morphologies. They are hidden with green on inter-cities locations. Yet, in inevitable cases, where a motorway passes through an urban area, its urbanisation is designed as a street including buildings, programmes and functions. Therefore their arterialisation occurs in a way to offer human-scale spaces for people to conduct their daily lives as a part of social communities. The speed offered is reduced by creating smaller and narrower mobility spaces that would create equal conditions for pedestrians, rather than prioritising the automobile. The intersection and encounters are held in the structures that are built aiming the minimum taming of geographies.

The pedestrian mobility inserted into Uzunçayır is performed on very large mobility structures which were built to afford the automobile' movements. Walking in automobile spaces draw a unique pedestrian experience. The rest of the study will focus on the pedestrian mobility in Uzunçayır to evaluate and understand its street-like qualities by examining the experiences of the pedestrians' practices. In order to accomplish that, mobilities, mobility modes, and requirements and practices of the modes are discussed through Mobilities Research

4. MOVING IN THE CITY

The city is constituted through multiple flows and interactions, and it is experienced by the body. As people, our most fundamental instrument is our bodies, through which we see, comprehend, communicate and react. The body is central to understanding any human-related issue, including the world we roam in, which is compartmentalised as cities, places, etc. Any non-private space can be accessed by anyone and is used by everyone as daily life obligates people to be in public spaces. The investigation and design of public spaces need to be approached by prioritising the common and communal experiences of individual bodies. The body experiences spaces through the haptic, visual etc. sense whilst being in and moving through them. This fundamental basis of spatial experience is primal but the world is a highly complex mechanism as it is a whole of intricate relationships constructed socially.

The life we pursue and become its parts and contributors as individuals strengthens the social systems we created during the process of civilisation such as government, religion, marriage, money etc. These cultures require every person's involvement yet they don't always look after people's best interests. The majority of our desires and intentions go through these filters first before we actualise them. This includes moving in the city. The city as a material environment reflects and is built upon these social and cultural procedures. Therefore moving in the city is not as simple. It is often reasoned and monitored by the social construct.

Many of our movements in the city are obligated and they are ratified. Activities of going to work, shopping for food, and visiting a doctor are obligations and they necessitate certain abilities such as having a job, money, insurance etc. Our capabilities and authorisations need to be constantly affirmed to realise our intentions in terms of socio-economical class, gender, identities and other categorisations. People are positioned as subjects to follow the rules and customs created and monitored by politicians, lawmakers, law enforcers and even public pressure.

Mobility as a term contains these social and cultural layers alongside the movement itself. It is interested in how the spaces in-between are practiced during travel, rather than only focusing on the change of the locations. The reason, the ease, and the frictions in the movement are subjects of mobilities. This contains how the distances are achieved. The type of movement, mode of mobility and transportation matter in defining the experience.

Uzunçayır is theoretically and physically a mobility space as it is first formed but the intersections of movements. It is a destination, a departure and a path for certain movements, and it is travelled to, from and through by various mobility modes such as being a pedestrian, driving and public transportation. Mobilities research fits best to unravel the situation in Uzunçayır.

This chapter focuses on mobilities research, the politics of mobilities and modes of mobility. The mobility modes are investigated by their natures, requirements and politics. The information produced in this chapter will construct the rationale of the following chapters which aim to understand pedestrian spaces in a highway.

4.1. MOBILITY

Mobilities include the movements of people, images, and information. The mobilities paradigm embraces the methods and infrastructures that allow mobility and also involves the borders of immobility that limit, channel and regulate movement. It involves examining different modes of mobilities and their complex combinations, corporeal travel of people, physical movements of an object, and virtual travels of information.

Tim Cresswell defines mobility in comparison to movement. Movement is the general fact of displacement between locations. The matter is the locations at the beginning and at the end of the displacement. Mobility explores the meaning of the movement, prioritising the displacement itself by discussing the context, type,

strategies, social implications, power, and experiences. Tim Cresswell explains movement as getting A from B, containing time and space. Therefore mobility could be explained as the combination of time, space and meaning.

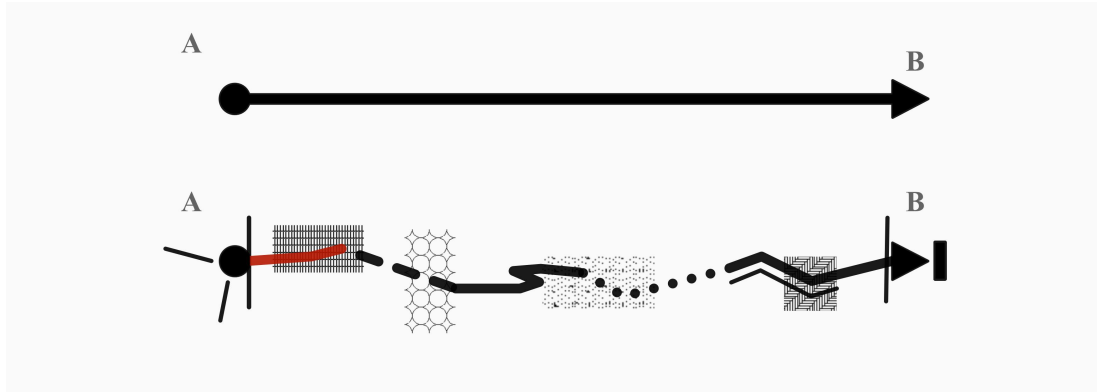


Figure 4.1: Movement and Mobility
Aytek Alkaya, 2022.

The image in Figure 4.1 illustrates the difference between movement and mobility. As movement is a positivistic phenomenon that is abstracted from the context, mobility unpacks the human experience. Mobility is not merely about the change of locations or positions, rather it investigates the reasons, restrictions, being welcomed, the tools used and the conditions of the journey.

Tim Cresswell categorises understandings of mobility under three approaches. Mobility as a brute fact is an empirical reality that is measured and analysed and is the most abstracted approach. Mobility is approached as a subject to be made sense of through representational strategies in disciplines of film, law, photography, literature etc. that the movement gets related to freedom, transgressions and creativity. And, mobility is approached as a way of being on the earth that is practiced, experienced and embodied. Tim Cresswell continues to discuss mobility in terms of opposition to fixity, representation methods, commuting, bodily movement, immigration, and politics.

Mobility turn means the explicit inclusion of mobility and movement within a wide array of academic studies crossing cultural geography, planning, urban studies and architecture.¹⁹⁴ Ole B Jensen defines mobility as the actual practice of moving through space and time.¹⁹⁵ Lesley Murray and Sue Robertson imply that mobilities mean the movements and their meaning that are contextualised in social and cultural spaces.¹⁹⁶ Mobilities are constitutive aspects of cities that are diverse and connected.¹⁹⁷ Spaces of mobility allow the possibility of continually re-imagining the city through infinite potential combinations of interactions between actions and assemblages.¹⁹⁸ Mobility is interpreted as a variety of forms of movement and flow which are connected to the performance of everyday life.¹⁹⁹

4.2. RHYTHM

Uzunçayır is an intersection, hub and facilitator of urban daily mobilities. As a mediator between the dense urban development and sprawled planning, it is one of the new centres of Istanbul. It is the hub on D100 that is nearest to older neighbourhoods. This causes Uzunçayır to be employed as the host of several mobility modes that have different speeds, accessibility, and infrastructure.

Uzunçayır's mobility accommodating structure is formally called a grade-separated junction, but Uzunçayır is often referred to as an intersection in this study. Because Uzunçayır's relationship with mobility is more than being a junction for roads, it generates motions. The motions produced are not limited to movements of automobiles, rather motions in various forms, scales and speeds are cultivated which

¹⁹⁴ Jensen, Ole B., "Negotiation In Motion: Unpacking A Geography Of Mobility", *Space And Culture*, Vol. 13, No. 4, 2010, pp. 389-402.

¹⁹⁵ Jensen, Ole B., "'Facework', Flow And The City: Simmel, Goffman, And Mobility In The Contemporary City", *Mobilities*, Vol. 1, No. 2, 2006, pp. 143-165.

¹⁹⁶ Robertson, Sue and Lesley Murray, "Drawing Mobile Shared Spaces: Brighton Bench Study", in Justin Spinney, Suzanne Reimer and Philip Pinch (ed.), *Mobilising Design*, Routledge: Taylor and Francis, London and New York, 2017, pp. 217 - 237.

¹⁹⁷ Söderström, Ola, "Mobility", in Mark Jayne and Kevin Ward (ed.), *Urban Theory: New Critical Perspectives*, 1st ed., Routledge, London, 2014.

¹⁹⁸ Robertson, Sue, "Drawing The Urban Highway: Mobile Representations In Design And Architecture", in Lesley Murray and Sara Upstone (ed.), *Researching And Representing Mobilities*, 1st ed., Palgrave Macmillan, London, 2014, pp. 129 - 149.

¹⁹⁹ Cass, Noel, Karolina Doughty, James R Faulconbridge, and Lesley Murray, "Ethnographies Of Mobilities And Disruptions", Research Councils UK Energy Programme, 2015, p.41

intersect each other in Uzunçayır. The intersecting motions are discussed through Henri Lefebvre's Rhythmanalysis.

Rhythmanalysis is a concept introduced by Henry Lefebvre in 1992. Lefebvre criticises rhythm being assumed as merely a mechanical overtone and the organic aspect, which would add a more philosophical meaning to rhythm, is neglected. The studies of pulse, circulation, music, historical or economic eras, and gymnastics are direct and close to practice. Every rhythm in time and space includes reprises, returns and measures. But these repetitions are not identical. There is always something new in the repetition. Lefebvre suggests the study of rhythm should be approached from a philosophical aspect. Rhythm combines quantitative and qualitative aspects which are distinguished moments and links that connect them together. Rhythm is governed by rational laws as regulated time, but it touches humans' least rational aspects. There are rational, numerical rhythms in the body which are respiration; heart, hunger etc. and there are also natural rhythms which are social and mental functions. In rhythmanalysis, both are needed.²⁰⁰ There are basically two types of rhythms; one is organic which is the human body, and the other is mechanical which is produced and imposed by capitalism, technology, and industrialisation.²⁰¹ The organic rhythm of the mind is tamed by the physical environment. It is regulated, restricted and altered to preserve the order.

The rhythmanalysis is adopted as a way that might entangle the movements in Uzunçayır which accommodates several motions in different scales in terms of size and speed. It is used in this research as a lens to understand and discuss the movements unravelling the hidden information the intersection of motions contains.

²⁰⁰ Lefebvre, Henri, *Rhythmanalysis*, 2007.

²⁰¹ Cresswell, Tim, "Politics Of Mobility", Video, 2013.



Figure 4.2: Rhythm of Motions in Uzunçayır
 Aytek Alkaya, Video, 2020
<https://www.youtube.com/watch?v=dMzkvuhBP3s&t=2s>

An animation has been created in order to represent the speed differences between pedestrians and vehicles. A chronophotographic collage of several instants from the animation is shown in Figure 4.2. Mobility is reduced to abstracted displacement by removing spatial context and hiding embodiment in order to emphasise the rhythm that is created by several types of motions with different speeds.

The animation was inspired by the work of Dawn Lyon²⁰² which she has also turned into publishing that she investigates the ways of documenting a market space in London. She says her photographs of the place after some time were all the same.²⁰³ This repetition led her to work on the rhythm. She took pictures from a fixed spot every 10 seconds for 11 hours which then became a speeded-up time-lapse film where 1 hour can be seen in 30 seconds. She also added the sounds from the market

²⁰² Lyon, Dawn, *Billingsgate Fish Market*, Video, 2013.

²⁰³ Lyon, Dawn, *What Is Rhythmanalysis?*, Video, 2015.

space. We can get information from her work about atmosphere changes around different kinds of activities, temporalities, the flow of the market, social situations, and interactions of people. Lyon discusses that the researchers should be grasped by and at the same time have a critical distance to the life in that space to be able to interrogate them.²⁰⁴

In the animation, the timings of the motions and the length of the video are based on the walking speed as pedestrians are the main concern of this study. The length of the video was calculated according to the duration of how long time a person can cross the footbridge. The footbridge is 400 m. With the average speed of walking, it would take people the cross the footbridge 5 minutes. So the video captures the movement in the area for 5 minutes. The animation was created on Cinema 4D. Individual routes were drawn for every motion. The lengths of the routes were calculated according to the formula of $V=X/t$, keeping the t (time) 5 minutes for each. The motions were saved by creating keyframes. The cars were cloned to represent the business of the road, and the distributions of the clones were set to random placement. Distribution and offset values were decided after several attempts.

Paul Virilio's discussions about speed limits influenced the speeds in the animation. Virilio argues that the speed limit is an act of government in order to control the highway. The government wants to limit the power of motorisation. The speed limits remind us of the continuity of displacement and moving within the cities.²⁰⁵ The speed limit policies are socially and culturally produced restrictions by the authority, although the physical restrictions of spaces and structures are essentially argued in this study. The material form's affordance and made-up impositions reflect the opinions and control of the power. It is also worth considering that the built impositions prioritise the speed yet the operational impositions limit it. The speeds of the modes in the animation are generated according to speed limits for

²⁰⁴ Lyon, Dawn, "Doing Audio-Visual Montage To Explore Time And Space: The Everyday Rhythms Of Billingsgate Fish Market", 2016, pp. 57-68.

²⁰⁵ Virilio, Paul, *Hız ve Politika*, 1998.

motorised modes, and average speed is used for pedestrians. The speed of the automobile is set to 80 km/h as it is the speed limit in state highways although it varies in differently identified sections of D100. The Metrobus runs at 70 km/h speed, the metro runs at 80 km/h, and the average speed of human walking is 85m/min.

The rhythmanalysis is applied to Uzunçayır in order to unveil the tangled and intertwined motions produced in-situ. The rhythm that gives information about the speed, frequency, scale and distribution of the motions are illustrated through the animation. Several mobility modes produce their own speeds. Generated speed of every individual mode is different. These different speeds create a rhythm because they share a communal space although they are in different layers.

One of the outcomes of the rhythmanalysis is that urban movements are regularised. They form a system carefully engineered and calculated according to time. The movements are aligned linearly following each other to provide continuous access in the city. This causes the city to work almost as a machine, moving people as goods carried by conveyer belts in factories.

As public transportation needs to offer well-organised schedules, individually managed mobilities such as walking and driving, are assumed to be more organic and have more freedom. They are also mechanised, giving people no power over their experience in the city.

The rhythmanalysis also reveals that pedestrian movements outstand in the rhythm compiled by the mixture of different speeds. Its corporeality is unusual among the other movements, according to its scale of mass and speed. Pedestrian movement is small, slow and sparse in the composition of movements that work harmoniously in Uzunçayır. This causes them to appear almost static. The peculiarity of walking being added to the composition can be interpreted as it is less emphasised and less valued. It is unfolded as a token in the mobility system dominated by fast movements of the large motorised vehicles.

The rhythmanalysis extruded different mobility modes and mobile actors in Uzunçayır. As an in-situ research method, it drew the mobilities in Uzunçayır which is used to document the various mobilities. The movements of which the types, spatiality and politics are discussed in the following chapter are based on the modes extracted by rhythmanalysis.

4.3. POLITICS OF MOBILITY

Being in the world entails physical and digital accessibility. Flows of information and human mobility are essential to being part of the material and social systems. Yet, mobility is restricted, and it is not accessible by all. It needs to be granted as a human right, rather, it is implemented as a privilege.²⁰⁶ Political mobility raises discussions about rights and justice. The right to travel and displacement are often discussed in the context of migration, race and gender. But the right and justice are also seen in everyday urban mobilities. The social justice and injustice of mobility are shaped by spatial, infrastructural and institutional configurations in everyday mobilities. Enabling and prioritising specific mobility modes by emphasising them in thoroughfares causes social exclusions.²⁰⁷ Mobility cultures draw unequal patterns that differ according to bodily ability, age, ethnicity, class, gender, and location. These structural differences influence who can benefit from public transport or who has the economic power to travel faster and safer.²⁰⁸ The right to mobility and therefore right to the city are infused into the social construct deeply that to achieve fairness and justice would require considering transforming the entire mobility.²⁰⁹

Politics of mobility is discussed in two aspects which are the reason for mobility and the ease of mobility. The mobility capability, which is conceptualised by Mimi Sheller, is related to the reason for mobility. It questions mobility justice in

²⁰⁶ Anderson, Benedict, *The City In Transgression*, 2021.

²⁰⁷ Prytherch, David L., and Dominique T. Daly, "Rights and Duties of Circulation on American Streets: To 'Proceed Uninterruptedly' or 'with Reasonable Care?',", 2014, pp. 211–229.

²⁰⁸ Vannini, Phillip, "Mobile Cultures: From The Sociology Of Transportation To The Study Of Mobilities", 2010, pp. 111-121.

²⁰⁹ Enright, Theresa, "Transit Justice as Spatial Justice: Learning from Activists,", 2019, pp. 665–680.

terms of whether it is self-determined or forced. She argues that slavery is the highest level of mobility injustice as people are not physically allowed to move and don't have any power over the decisions of when and how to move.²¹⁰ The motives of mobility can be internal or external to a person.²¹¹ It can be about a personal decision; a will to move or it can be a compulsion that some authority or some condition enforces the movement. Personally decided mobility reflects free will, accessing the requirements of mobility. It is optional. Obligated mobility doesn't involve any choice. The reasons for obligated mobility show a variety of forces between going shopping and immigration. The lightest reason for mobility might be assumed as recreational mobilities or meeting acquaintances. But these reasons are still requirements as these are psychological necessities. Aharon Kellerman argues that every physical mobility is a necessity for our existence as living beings including moving in space to find resources to survive or for social interaction.²¹² Perhaps it would be more consistent and inclusive to discuss the level of the reason's severity.

The reason for the majority of the mobilities in Uzunçayır is obligated as they involve mostly commuting although it is destination and departure for people who work and live in near surroundings. Uzunçayır, as an intersection of major roads and busy public transportation, briefly accommodates people passing by.

Another component of mobility justice is presented as the ease of mobility. It investigates how people move and what obstacles people come across during the movement. The obstacles which slow down or stop mobility are identified as frictions and are discussed in the following chapter. People who can move more comfortably and faster are identified as the 'kinetic elite'.²¹³ Their travels are less obligated and the travels themselves include choices of modes. On the other hand, the kinetic underclass is sometimes forced to move and sometimes is prevented from moving. Their travel can be uncomfortable and highly regulated. It involves a variety

²¹⁰ Sheller, Mimi, "Natural disasters, mobility and inequalities", Video.

²¹¹ Cresswell, Tim, "Politics Of Mobility", Video, 2013.

²¹² Kellerman, Aharon, *Personal Mobilities*, 2006.

²¹³ Cresswell, Tim, "Politics Of Mobility", Video, 2013.

of frictions like being stopped by the police in the Metrobus station, walking greater distances, not being able to choose paths, etc.

“Flow seeks to increase speed (and save time) by prioritising the faster means of movement ... slower vehicles yield to faster ones and pedestrians to all, walkers deferring to cars, cars to trains, trains to planes, and so on.”²¹⁴

The transport disadvantage has an important role in the quality of life and different levels of access to mobility modes are related to social inequalities. Poor access to mobility modes is partly responsible for social exclusion.²¹⁵ The injustice of mobility in cities is often observed through the mobility modes and their hierarchy. The hierarchy amongst mobility modes in Uzunçayır can be scaled down to the ‘feud between pedestrians and motorists’.²¹⁶ The modes in Uzunçayır involve automobiles, pedestrians, buses, minibuses, the metro and the Metrobus. People who use public transportation can be categorised as pedestrians as the motorist in the public transportation is only the driver who is obligated to follow a certain route. This categorises transport users as pedestrians in terms of ease of mobility, direct access to destination, frictions, and every public transportation involves some walking.

The automobile is assumed to offer the freest mobility among everyday mobility modes which is discussed in further detail under the title of mobility modes. The comfort, being unconstrained from specific times and routes, and being able to pause and continue when wanted are the qualities that locate auto-mobility in a higher hierarchy than walking. Besides this, the automobile-centric contemporary city, which was discussed earlier, causes mobility injustice by neglecting the pedestrian spaces.

²¹⁴ Sorkin, Michael, “Traffic in Democracy”, 1999, pp. 1-18.

²¹⁵ Hine, Julian, "Mobility And Transport Disadvantage", 2011, pp. 21-40.

²¹⁶ Prytherch, David L., and Dominique T. Daly, “Rights and Duties of Circulation on American Streets: To ‘Proceed Uninterruptedly’ or ‘with Reasonable Care?’”, 2014, pp. 211–229.

The city is shaped according to the encodement of the automobile.²¹⁷ The urban form creates exclusions and injustice in terms of the opportunities that cannot be accessed by disadvantaged and low-income groups.²¹⁸ The justice in urban circulation is questioned according to the power relations between the automobile and pedestrians. Pedestrians are small, powerless and vulnerable compared to the mass and speed of the automobile. The uneven spaces of automobile-centric thoroughfares cannot be spaces of justice because of reinforcing these power relations.²¹⁹ Although walking is encouraged as an active and sustainable mobility mode, the city creates injustice for those who have no option but to walk. Prioritising the automobile creates challenges for pedestrians.²²⁰ Walking in the city is particularly difficult for certain groups like the disabled, women, LGBT+, children, elderly etc., but this research treats all pedestrians as disadvantaged because of walking's powerless conditions in comparison to the automobile.

The justice or injustice of mobility that is offered by the urban form is achieved through infrastructures. Hierarchical separation of modes became materialised in cities. The built environment, policy, and culture come together and form the movement regulating structures that interfere with the mobility of people by limiting them. How infrastructure regulates mobility is discussed in the following chapter.

²¹⁷ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

²¹⁸ Murray, Lesley, "The Walking Commute: Gendered and generationed", 2020, pp. 109-117.

²¹⁹ Prytherch, David L., and Dominique T. Daly, "Rights and Duties of Circulation on American Streets: To 'Proceed Uninterruptedly' or 'with Reasonable Care?'" ,2014, pp. 211–229.

²²⁰ Murray, Lesley, "The Walking Commute: Gendered and generationed", 2020, pp. 109-117.

4.4. MODES AND CONDUITS OF URBAN MOBILITY

Various movements at various scales, come together at intersections, and nodes become a major engineering challenge. The main objective of intersections is to facilitate convenient, easy and efficient movement.²²¹ The motions produced by everyday urban mobilities in Uzunçayır appear like a complex knot, yet every single motion is calculated, controlled and regulated. People are regulated via an ‘urban disciplinary process’²²². Design rules seek to order people’s movements through material channelling.²²³ The movements are separated and enforced to be performed in individual mobility conduits.

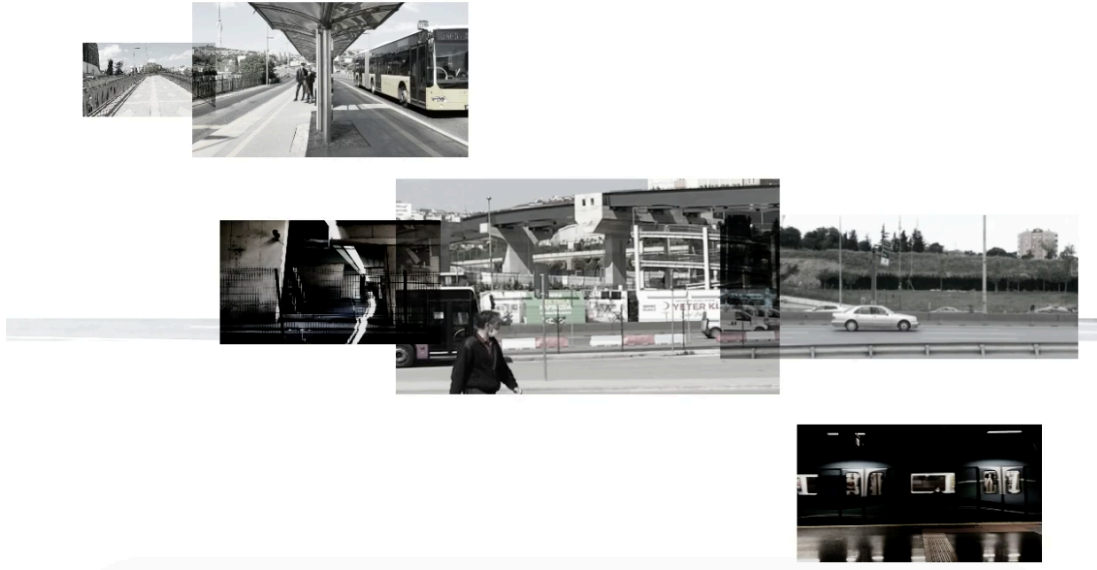


Figure 4.3: Intersection of Mobility Conduits
Aytek Alkaya, (Video), 2020
<https://www.youtube.com/watch?v=Jb2z8r77vyc&t=44s>

An instant from a collaged mapping of videos recorded in Uzunçayır is represented in Figure 4.3. The conduits of mobility modes are mapped according to their geographical locations. The intersection of networks and movement conduits carefully orchestrates the entirety of every movement. The movements are tucked

²²¹ Prytherch, David, "Rules Of The Road: Choreographing Mobility In Everyday Intersection", 2015, pp. 45-63.

²²² Edensor, Tim, "Moving through the City", 2014, pp 121-140

²²³ Prytherch, David, "Rules Of The Road: Choreographing Mobility In Everyday Intersection", 2015, pp. 45-63.

into the conduits that separate movements. The modes actually intersect only interchange stations of public transportation modes by pedestrians' mode changing journeys. The conduits preserve the speeds of different modes and they also regulate the administrative rules. The change nodes are monitored, regulated and secured in order to charge the travels. The conduits can only be connected and encountered through pedestrian mobility. Pedestrians are allowed to go through the Metrobus or metro conduits (of course, with a fee) as well as pedestrian separation structures.

Uzunçayır junction was built to intersect D100, built in the 1970s as an international motorway, and the first bridge. Its sole purpose was to provide fast and less-frictioned auto-mobility. It fundamentally and currently prioritises the automobile. So, driving is fundamental in the discussions about Uzunçayır.

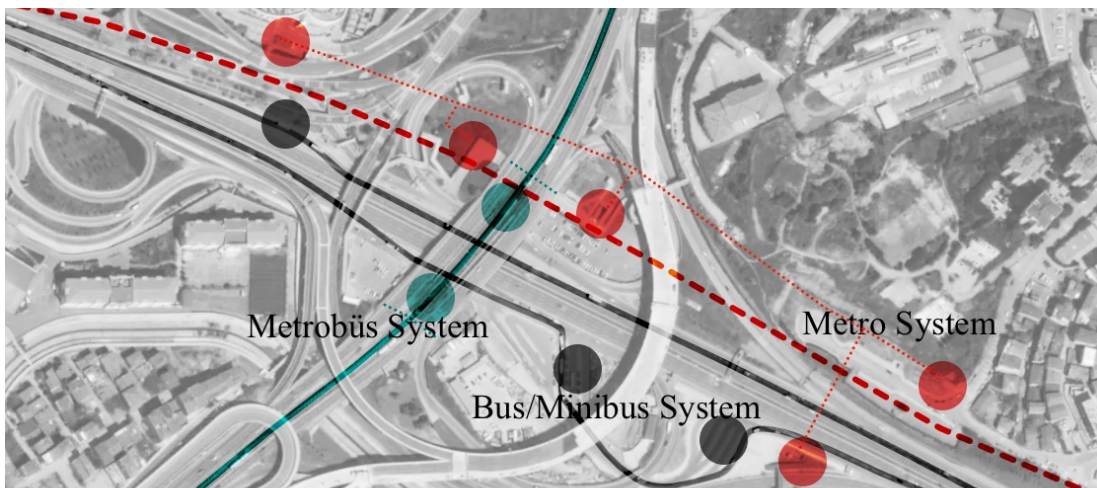


Figure 4.4: Public Transportation Modes in Uzunçayır
Aytek Alkaya, 2022

In Figure 4.4, public transportation systems in Uzunçayır; the metro, the Metrobus, buses, and minibuses are highlighted. Public transportation modes in Uzunçayır are linked together to provide a secure walking practice for pedestrians via pedestrian separation structures such as overpasses, underpasses and under-bridges through the highway. Uzunçayır being a highway junction as a part of a sprawled urban portion, doesn't allow complete pedestrian journeys between departures and arrivals, the walking spaces inhabit pedestrians who walk in a section of their journey and use public transportation(s) in other sections.

Also, public transportation doesn't offer the abilities, freedom, speed, optional departures and pauses, and the comfort of the automobile, although it is a motorised vehicle. Therefore public transportation is approached in this study as a part of a pedestrian separation structure system that inhabits pedestrians for a portion of the time in their journey. This shifts the discussions between the automobile and pedestrians.

The rest of this chapter focuses on mobility modes of driving and walking which are practiced by the actors of automobiles and pedestrians. The automobile is presented as an extension of the body. It is discussed according to its qualities that transform the body, alter the perception and require certain changes in the city, and whether it contributes to democratic mobility. On the other hand, walking is investigated through the body, the body's perception, walking types and walking of pedestrians. The physical and psychic experiences of the body, the practice of walking recreationally and as a transportation mode, and the politics of mobility are discussed..

4.4.1. The Automobile

There are manifold approaches to auto-mobility in literature. The subject is studied according to its definition as a term and also according to its spatial relations. In this chapter, the automobile is investigated as a mobility mode. It is accepted as the mode that provides the most freedom.^{224,225} It works as a body extension and *private capsule*²²⁶ that gives people the opportunity of representing themselves and perform different behaviours as they wish. Driving requires careful attention, yet it is inactivating in terms of sensing the environment.²²⁷ The automobile provides a shell that would offer anonymousness which supports reducing prejudice against

²²⁴ Cass, Noel, Karolina Doughty, James R Faulconbridge, and Lesley Murray, "Ethnographies Of Mobilities And Disruptions", 2015, p.21.

²²⁵ Borden, Iain, *Drive: Journeys Through Films, Cities And Landscapes*, 2012.

²²⁶ Banham, Reyner, Los Angeles: The Architecture of Four Ecologies, 1971.

²²⁷ Merriman, Peter, "Driving Places", 2004, pp. 145-167.

individuals. On the other hand, it is not accessible to everyone, therefore it reproduces injustices in society.

Automobile theoretically offers idealised mobility. Any travel for any reason could be executed at any time desired.²²⁸ Driving on the open road for recreation, extending vacations, designating the route or coming back home at any instant are decided by the driver. Despite the fact that automobiles may not be accessed by all²²⁹, and vehicular traffic and busy roads are despised, auto-freedom²³⁰ plays an important role in the constitution of democratic life.²³¹ Driving is positioned in the centre of individual mobility. It is seen as the right of the modern citizen in terms of freedom and independence.²³²

Mimi Sheller²³³ claims that auto-mobility's flexibility facilitates the car-driver to travel at any speed, at any time, in any direction along with the complex road systems. Automobile broadens people's abilities to move, and therefore what they are capable of. The automobile gives people the opportunities to travel when they need, plan the journey, discover new places by chance, and pause and start off again when they want to.

Automobile owners are not limited to the schedules or alignments of public transportation. Automobile offers a much richer range of destination points. Rural and suburban areas become accessible. The travels between exceeding distances between metropolitan areas and peripheries are available.²³⁴ The car provides continuous movements. The frictionlessness of the automobile positions public transportation as the determinative and the fractured mode of mobility because of the disruptions in the journeys that rely on public transportation.

²²⁸ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

²²⁹ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

²³⁰ Sheller, Mimi, "Automotive Emotions", 2004, pp. 221-242.

²³¹ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

²³² Cass, Noel, Karolina Doughty, James R Faulconbridge, and Lesley Murray, "Ethnographies Of Mobilities And Disruptions", 2015.

²³³ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

²³⁴ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

Being inside the car extends the body, modifies the capabilities of movement and empowers the right to occupy space by creating almost an armour to its driver. This turns the attention to the car rather than the driver and the driver's presence and personality become less recognised therefore hardly matter. This helps drivers remain anonymous and entitled.

Dutch rock band Jovink & The Voederbietels'es song *An De Kant* narrates a driving experience. The lyrics describe an enraged man, using the automobile as an instrument for self-expression. He is driving furiously as a bodily portrayal of his anger. The car reflects his antagonistic emotions as they are released. He is exhibiting disorderly behaviours such as not stopping at the red light and challenging the police, and considers his actions as an uprising. He is proud of his revolt and feels empowered.

*"I'm getting in my car, I'm in a good mood
I let it haunt you; I ride against everything
I just made it to the red traffic light
I give so much gas that I forget to brake
All roundabouts I take leftum
I think that's so beautiful, I don't know myself
...
All police I challenge
I got a kick from the siren sound"*²³⁵

There is a scale difference between people and a large environment that this difference would affect people's adequacy. The automobile, as an extension of people, grants speed, control and anonymousness to its driver. This enhancement allows them to feel powerful again and the disparity between people and the city gets reduced.²³⁶

²³⁵ Jovink & The Voederbietels, *An De Kant*, Song, 1998.

²³⁶ Appleyard, Donald, Kevin Lynch, and John Myer, *The View From The Road*, 1964.

The anonymousness that the automobile provides for drivers helps decrease social prejudices as well. The car itself becomes the agent. The driver might be a white heterosexual man, a pregnant woman, a person whose origin is a subject to racist prejudices, or a transexual sex worker. In this sense, auto-mobility is a democratic tool for emancipation from social inequalities on the road. Iain Borden ²³⁷ claims that driving creates a world where all men and women are equal. He considers the notion of driving as the harbinger of democracy in its cultural connotations. Yet, the automobile as an identically produced device extracts manifestation of any identity.

Henry Ford's innovative production techniques caused broadening the gap between different socio-economic income groups. The 1949 Ford model was promoted as a "living room on wheels"^{238 239}, aiming to offer an alternative to the common automobile. The comfort of the automobile was used as a sales technique. Since then, the automobile is improved according to comfort, exclusiveness and style differences which represent individuality. People express their individualised personalities through their 'private capsules'²⁴⁰ with particular choices of model, colour, size etc. alongside stating their purchasing power.

The automobile is accepted as an indicator of economic class and each model reflects the money spent on it.²⁴¹ Yet, there are people who do not have access to a car. According to the Turkish Statistical Institute (TÜİK), there were 13.110.657 registered cars in Türkiye at the end of 2020.²⁴² This means the vast majority of people do not own a car. Economic disadvantages being the main reason; also age, disability, and not having a driver's licence are additional factors in not being able to benefit from the automobile. Therefore auto-mobility could be defined as a *privilege*²⁴³ rather than being a pillar of democratic mobility.

²³⁷ Borden, Iain, *Drive: Journeys Through Films, Cities And Landscapes*, 2012.

²³⁸ Marsh, Peter Edward, and Peter Collett, *Driving Passion*, 1986.

²³⁹ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

²⁴⁰ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

²⁴¹ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

²⁴² Türkiye İstatistik Kurumu, *Motorlu Kara Taşıtları- Aralık 2020*, 2021.

²⁴³ Doughty, Karolina, and Lesley Murray, "Discourses Of Mobility: 2014, pp. 303-322.

In terms of access to the automobile, auto-mobility is considered to be a privileged mode of mobility that widens the gap between different income groups. But, in terms of the reason for mobility, and the travel being mandatory, we cannot say that everyone who drives a car is privileged. Auto-mobility is merely a more convenient mode for the majority of car owners who are still obligated to move around the city. The obligation of movement might enforce people to obey the authority of automobiles. The reason for mobility and mobility politics are discussed in further detail in the chapter Politics of Mobility.

Drivers need to focus on the road at all times in order to observe the road, understand the space, and calculate the actions and movements. The attention required for driving makes drivers highly alert and engaged. The driver focuses on observing the road to decide the next move in instants which does not allow focusing on any other stimulation. This would prevent drivers to make sense of the space and create relations to the city that they are driving through. Consequently, the speed of the automobile detaches the driver's body from the space where the car moves on.

Concisely, auto-mobility is a mobility mode that offers an almost seamless journey. Starting, pausing, stopping, and choosing the route are decisions that the traveller can make. Cars are considered as personal capsules that allow people to remain almost anonymous by hiding them. This has a positive outcome of supporting the emancipation of vulnerable groups but at the same time, it dims and hides the distinction of personalities and identities of people. It extends the body's capabilities that would enhance the feeling of empowerment. On the other hand, automobiles are socio-technical representations of economic inequalities. Socio-economical factors constrain people's access to auto-mobility and enforce them to less favoured mobility modes like public transportation which imposes a fractured journey.

4.4.2. The Pedestrian

Walking is presented as a recreation method in the literature. Frederic Gros discusses walking's power of bringing freedom, releasing the burden of care and freeing from illusions. He suggests that walking is a way of escaping from identities. Walking releases people from social obligations. Walking is an opportunity for people to rediscover themselves, recovering the sensation and joy of being and existing because people don't do anything when walking.²⁴⁴

Walter Benjamin conceptualises Baudelaire's flaneur as a walking type that is a way of connecting oneself to their inner thoughts and a way of understanding others.²⁴⁵ The flaneur technique is practiced to experience the city through walking. It develops ways of representing the city by reading the complex traces. By flaneur, hidden and unpredictable things are revealed.²⁴⁶ Flaneur is associated with strolling, observation, leisure with crowds and detachment.²⁴⁷

Derive is another way of walking that is introduced by the Situationists as a psycho-geographical technique. Derive requires people to drift around the whole time. Nonlinear movements would reveal the exciting elements of the city. People are encouraged to walk following changes of ambience and irrational urges rather than following set routes and ignoring the obstacles such as private property and bureaucratic barriers.²⁴⁸

Flaneur presents a recreational walk that would be benefited from experiencing the city. Derive is a radical design suggestion that would require reorganising cities. Both concepts approach walking as a self-determined, enjoyable and sense-making practice. In the modern city, walking is a less optional

²⁴⁴ Gros, Frederic, *A Philosophy of Walking*, 2014

²⁴⁵ Bates, Charlotte, Alex Rhys-Taylor, "Finding Our Feet", 2017, pp 1-11.

²⁴⁶ Edensor, Tim, "Moving through the City", 2014, pp 121-140

²⁴⁷ Kellerman, Aharon, *Personal Mobilities*, Routledge, 2006.

²⁴⁸ Edensor, Tim, "Moving through the City", 2014, pp 121-140

transportation mode for pedestrians to cover distances through the spaces that are regulated, channelled and constrained.

People might walk for no reason with the decisions self-made. Yet, most of the walks in the city are done by everyday travellers. When walking is adopted as a transportation and mobility mode, it is less optional. Walking is approached as a mandatory and unjust practice for pedestrians that is tiresome, less enjoyable, and performed in less desired environments.

Walking is basically a corporeal travel method performed by pedestrians. Pedestrian walks have functional purposes, which is the displacement between locations. They are often repetitive.²⁴⁹ The body is presented as a parcel of transit in task-centred and enforced walks. The body doesn't move, but it is moved.²⁵⁰ Walking in the city is a regulated movement that produces performances and choreographies, and the body is motivated by duty or necessity.²⁵¹

Walking represents the need to move from point A to point B. When in a hurry, it is performed briskly. The fundamental purpose is to overcome distances to certain destinations. Other destinations and possibilities are ignored not to be distracted. As the pedestrian is often in a hurry, the aesthetics and human amenities are neglected, and the path is chosen according to safety, speed, and reliability. The shortest and the most straight line is often selected as the route.²⁵² The need to be quick and the mandatory route choosing accordingly are some of the reasons why walking is approached as passive and enforced. The rush of walking briskly and running are considered everyday emergency mobility. Although it is not a life-threatening emergency, it still might be resolved in undesired outcomes. The hurry and rush to be at the destination in time or to catch public transportation is a challenge and completing this challenge is an individual accomplishment.²⁵³ Walking

²⁴⁹ Lorimer, Hayden, "Walking: New Forms and Spaces for studies of pedestrianism ", 2011, pp 19-33.

²⁵⁰ Kellerman, Aharon, *Personal Mobilities*, 2006.

²⁵¹ Edensor, Tim, "Moving through the City", 2014, pp 121-140

²⁵² Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

²⁵³ Cook, Simon, "Rushing, dashing, scrambling: The role of the train station in producing the reluctant runner ", 2017, pp. 62-75.

in transportation hubs like Uzunçayır can be considered this walking type as the majority of pedestrians are rushing between the public transportation modes. Uzunçayır doesn't offer recreational activities or places to be engaged to. It is a pause in mobility that has to be overcome.

In today's city, acceptable forms of walking are discussed. Walking briskly or even running near a transportation mode are acceptable ones, whereas walking practices like loitering, hanging out, and lounging are deterred and considered potentially criminal. The movements in cities are mediated by power relations, and bodily practices are permissible.²⁵⁴ This occurs on different scales. 'Inappropriate' corporeal movements can be banned like prostitution and begging. 'Suspicious' pedestrians can be stopped and searched by police. Walking in 'other' people can be blocked by discriminative judgements of communities.

The order is commanded in Uzunçayır by mostly security personnel, and metal detectors and x-ray scanners in the entrances of public transportation modes. The security is allowed to search people, warn them, and stop their mobility. Occasional police searches called 'operations' occur. Police conduct inspections in Metrobus stations, stopping 'suspicious' people and doing searches for drugs and other illegal belongings.²⁵⁵

The issue with these searches is that they are directed at people whom the police think are suspicious. The power of making a stop is one of the few jurisdictions that police have that they can decide themselves without a warrant from a higher authority. Making a stop is categorised as a limitation which pauses people's freedom of travel, protected by the law, rather than an arrest. The suspicion that questions the legality of people needs to be supported by concrete indicators and educated evaluations of a crime to have happened or to be happened. Any other random stopping would be misfeasance and a violation of human rights.²⁵⁶ Making a

²⁵⁴ Edensor, Tim, "Moving through the City", 2014, pp 121-140

²⁵⁵ DHA, 'Metrobüste operasyon', News Article, in *Cumhuriyet*, 2016,

²⁵⁶ Demir, Seylan, *Polisin Temel Hak ve Özgürlükleri Kısıtlayan Yetkilerinin Kullanılmasında Değerlendirme Sorunları*, Thesis, 2013.

stop briefly and instantly transforms citizens into suspects²⁵⁷, which might make people feel anxious, unwelcome, guilty etc., the feelings that we wouldn't assume to feel on our way home.

The practice of walking is not only limited and controlled socially. The material world also constrains pedestrians. Walking is the oldest form of urban mobility. Most cities were structured to support walking until the major transformations caused by transport technology in the 19th century. Walking was still relevant when the first significant transformation occurred with the integration of mass public transport into the cities. The planning authorities neglected walking and public transportation with the introduction of private automobile transport in the 20th century.²⁵⁸ Most of the movement in the world retains a pedestrian element despite the anti-pedestrian cities developed in the 20th century with the emergence of the automobile.

The car's acceptance by planners caused the re-establishing of the relationship between urban form and walking.²⁵⁹ Walking is the most basic urban transportation mode, and it allowed cities to be formed and operated for thousands of years.²⁶⁰ Yet, it became a trivialised and submissive practice in the city that is transformed to afford mechanical means of transport.

Walking spaces in the modern city are planned as linear narratives with the principles of functional classifications. These spatial forms channel movement and constrain performances. Walking became a unidirectional performance along devised routes. This inhibits moving bodies from experiencing diverse choreographies; urban sensualities get erased in the flows.²⁶¹ The artificial environment, which reflects the domination over nature for the comfort of humans, started to dominate humans as

²⁵⁷ Alpert, Geoffrey P. , Roger G. Dunham, Meghan Stroshine, Katherine Bennett and John MacDonald , *Police Officers' Decision Making and Discretion: Forming Suspicion and Making a Stop*, Online Report, 2006.

²⁵⁸ O'Hare, Daniel, "Urban Walkability in the Subtropical City: Some Intemperate Considerations from SEQ", Online Article, 2006.

²⁵⁹ Bates, Charlotte, Alex Rhys-Taylor, "Finding Our Feet", 2017, pp 1-11.

²⁶⁰ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

²⁶¹ Edensor, Tim, "Moving through the City", 2014, pp 121-140

well. Modernist infrastructures regulate and stabilise the interpretability of the experience.²⁶²

The public spaces operate best when there is pedestrian movement through them, with amenities located within easy walk distances of one another. People feel safe walking in cities that still have threaded fabric of neighbourhoods.²⁶³ The pedestrian habitat needs mobile and static qualities, which are walking and resting. These spaces require a higher complexity level, social behaviour, and hidden view to encourage walking rather than linear and narrow spaces among the traffic/motorist spaces.²⁶⁴

4.5. IMPOSED PRACTICES

Material architecture forms the basis of cultural, social and political place which is the fundamental components of living in cities. It directly affects how relationships, practices and experiences are conducted in spaces. The physicality of the space mediates relationships, offers possibilities for negotiations and encounters, determine and often dominates the practices. The practices in voids of the morphology are stopped, led and allowed by the solids. On certain occasions, the intervention of the physical form is too strict that it detains or manipulates people by imposing certain mobilities.

Pedestrian mobility in automobile-centric spaces is pre-determined by infrastructural and structural forms. As pedestrians get in the way of the automobile's seamless and fast movement, they are constrained and highly regulated in encounters at intersections. How pedestrian mobilities are imposed by pedestrian separation structures when it is assumed that it is the automobile's right to move in the city, is discussed in this section.

²⁶² Gopakumar, Govind, "Who Will Decongest Bengaluru? Politics, Infrastructures & Scapes", 2013, pp. 304–325.

²⁶³ Bates, Charlotte, Alex Rhys-Taylor, "Finding Our Feet", 2017, pp 1-11.

²⁶⁴ Rapoport, Amos, History And Precedent In Environmental Design, 1990.

4.5.1. Intersections and Structures

Producing speed allowing thoroughfare has become the sole purpose of traffic engineering. Mundanely and routinely experienced space represents the emblem of power relations.²⁶⁵ The power is instantiated through prefabricated linear paths to fix and rationalise spaces. Movements are forced to run as conduits in order to facilitate seamless and directed flows.²⁶⁶ Extraordinary compact and dynamic socio-technical networks interlaced to modern urbanism via conduits, tunnels and highways.²⁶⁷ Uzunçayır segregates movements of actors via conduits as any other junction. The conduits in Uzunçayır are so strictly individualised and separated that the majority of the conduits that make up the rhythm do not actually intersect.

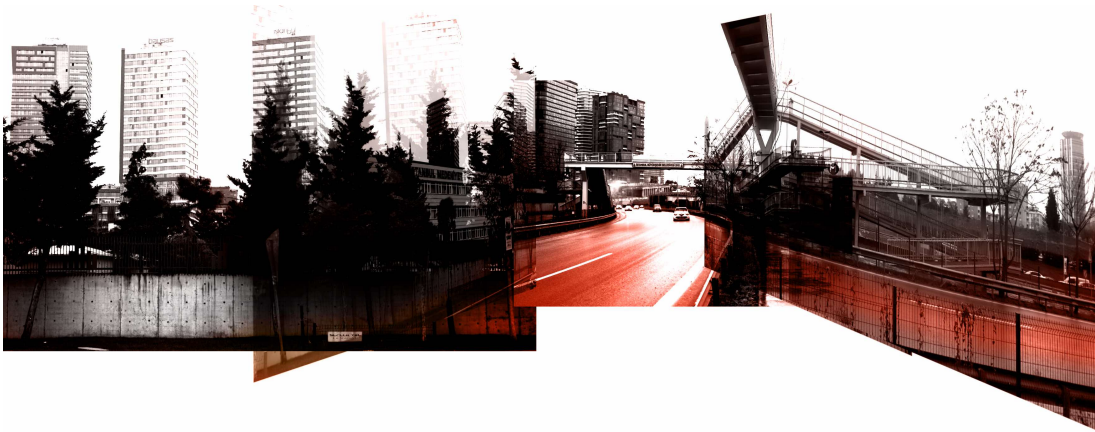


Figure 4.5: Intersection of Pedestrian and Automobile
Aytek Alkaya, 2021

Figure 4.5 shows one of the structured intersections in Uzunçayır. In the larger context, the residential zone is separated distinctly from the circulation spaces by walls and trees. And in the nearer scale of the thoroughfare, the movements on off-ramps of D100, the highway, movements on the connection road of the D100, the artery and pedestrian movements are organised and regulated. The conduits of these movements are formed in a way to offer automobiles a seamless ride while forcing pedestrians to follow intricate and complex alternative paths.

²⁶⁵ Murray, Lesley, Susan Robertson, “Drawing mobile shared spaces: Brighton bench study”, 2017, pp. 211-224.

²⁶⁶ Edensor, Tim, “Moving through the City”, 2014, pp 121-140

²⁶⁷ Graham, Stephen, and Simon Marvin, *Splintering Urbanism* 2001.

Michael Sorkin, who argues that flows try to increase speed to save time by prioritising the faster means of movement, defines intersections as the elaborated structures of conflict avoidance, as traffic engineers call undisciplined and confused mixes of conflicts. Systems are structured around untying the conflict between mobility modes by making slower modes yield to faster ones and pedestrians to all.²⁶⁸ Everyday intersections are central to high speed and high stake ballet of urban life, where social regulation and conflict can be a matter of life and death. The design of intersections imposes the standardised rules that direct and regulate a structured choreography of networked circulation. The practice, experience and creativity of mobile objects encounter each other in the structured intersections. The powerful rule system is institutionalised and materialised through the asphalt and concrete intersections in order to regulate movements and create order.²⁶⁹

Mobility infrastructures are essential components of ‘car age’ transportation and automobile-centric cities.²⁷⁰ Motorways and intercity highways were welcomed into the city, which produced widened thoroughfares, massive parking spaces that eliminate walking and structures to allow cars free rein in spaces.²⁷¹ The mobility structures instrumentalised to reflect the power’ impositions that would shape and direct people’s mobile decision-making.²⁷²

The most important example of the material form's imposition and segregation capacity is the bridges Robert Moses built in the highway. Robert Moses, who was a public official of New York City, administered large-scaled planning decisions, including highways, bridges and parks.²⁷³ Moses was influenced by modernists like Le Corbusier; he built social housing resembling his designs. ²⁷⁴ Moses embraced highways with the purpose of arranging beautiful serial visions

²⁶⁸ Sorkin, Michael, “Traffic in Democracy”, 1999, pp. 1-18.

²⁶⁹ Prytherch, David, "Rules Of The Road: Choreographing Mobility In Everyday Intersection", 2015, pp. 45-63.

²⁷⁰ Robertson, Susan, "Visions Of Urban Mobility: The Westway, London, England", 2007, pp. 74-91.

²⁷¹ Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck, “The Inner City”, 2000, pp.352-359.

²⁷² Gopakumar, Govind, “Who Will Decongest Bengaluru? Politics, Infrastructures & Scapes”, 2013, pp. 304–325.

²⁷³ “Robert Moses”, Online Encyclopaedia Entry, in *Britannica*,

²⁷⁴ Chantry, Erin, *Urban Designer Series: Robert Moses*, Online Article.

through them, although it required destroying existing built environments.²⁷⁵ He believed the public good could only be achieved by fragmenting the city and preventing diversity.

Robert Moses decided not to allow black people, who were the low-income group of the time, and accused of being loud and dirty in the public resort he built in Jonas Beach. He used infrastructure as an instrument for exclusionary and segregation. He built very low bridges along the way to Jonas Beach, which only allowed automobiles, knowing that black people are not ‘successful enough to own a car’ and have to take the bus.²⁷⁶ Langdon Winner mentions Robert Moses while discussing the politics that artefacts and technology have. These overpasses were deliberately designed to achieve a certain social setting about social class and race that would make ‘upper and comfortable middle class with cars’ more visible.²⁷⁷ Automobile owning is seen as a filter, a quality that reflects the economic class of individuals. As with any segregation and exclusiveness, automobile owners get some privileges. These privileges are provided through the power of material form’s controlling ability. The structures, systems, and machines have social and cultural outcomes. Although the infrastructures of mobilities are not perceived as tools for inequality, and they have become a reality of the contemporary city’s landscape, they still have a role in creating mobile segregation.

²⁷⁵ Robertson, Susan, "Visions Of Urban Mobility: The Westway, London, England", 2007, pp. 74-91.

²⁷⁶ Sennett, Richard, *Ten Ve Taş*, 2018.

²⁷⁷ Winner, Langdon, "Do Artefacts Have Politics?", 1980, pp. 121-136.



Figure 4.6: A Gift from IMM
Istanbul Metropolitan Municipality, 2022.

The newest addition to Uzunçayır grade-separated junction is emphasised in Figure 3.6. The on-ramp road connects both the artery to the highway and creates a parallel alternative to itself where also Metrobus runs. Istanbul Metropolitan Municipality presents this road to citizens as a holiday gift.²⁷⁸ This road is promoted as it would solve Istanbul's traffic congestion problem.²⁷⁹ It is also mentioned that this road would provide easier access to Optimist Residence²⁸⁰. The residences were built as a part of the controversial urban regeneration of Fikirtepe²⁸¹, which is defined as the politically 'unjust and unequal'²⁸² modernisation of a neighbourly place where children played in the streets.²⁸³

Besides being tools of direct political manipulations, the mobility structures altered the city's landscape. These structures constitute an artificial environment which reflects the modernist purpose of dominating nature.²⁸⁴ The city's image is

²⁷⁸ Istanbul Metropolitan Municipality, *Fikirtepe Kavşağı İstanbul'a Bayram Hediyesi Oldu*, News Article, 20.08.2021.

²⁷⁹ SonDakika, *İstanbul Trafikini Çözecek Proje Havadan Görüntülendi*, News Article, 10.04.2019,

²⁸⁰ İmar Panosu, *Fikirtepe-Ünalan Kavşağı, Optimist Residence'ye Yaradı*, New Article, 06.08.2018.

²⁸¹ Akşam, *Kadıköy-Fikirtepe İmar ve Ulaşım Yol Ortak Altyapı İnşaatında çalışmalar hızla devam ediyor*, News Article, 10.04.2019.

²⁸² Yalçın, Murat Cemal, *Kentsel Dönüşümü ve Kentsel Muhalefeti Kent Hakları Üzerinden Düşünmek*, Lecture, 10.06.2009.

²⁸³ Okul, Osman, "Between The City and the Neighbourhood Culture Fikirtepe", 2019, pp. 82-103.

²⁸⁴ Gopakumar, Govind, "Who Will Decongest Bengaluru? Politics, Infrastructures & Scapes", 2013, pp. 304-325.

constituted by ‘steel-lined tunnels and concrete undergrounds’.²⁸⁵ The experiences of people are regulated by the ‘infrastructure-scape’²⁸⁶ by brutalising the city that would result in ‘no person's lands’²⁸⁷.

4.5.2. Pedestrians Separation Structures

The public transportation conduits and the modes themselves are approached as parts of pedestrian conduits as they facilitate pedestrian movements. The only certain separation happens between pedestrians and private automobiles, as also discussed in earlier chapters. This section focuses on the ‘battle’²⁸⁸ between the pedestrian and the automobile.

In the networked city, the critical points of contact deal with the negotiations of drivers and pedestrians.²⁸⁹ The negotiations occur between the limitations of the human body and the might of the thousand of motor vehicles.²⁹⁰ Therefore the pedestrian-vehicle conflict refers to a one-sided violent encounter between the soft tissue of a human body and a large, hard, fast, invulnerable metal object.²⁹¹

In the interactions, pedestrians are forced to give way to the automobile.²⁹² The city being designed around the automobile causes pedestrians to lose the battle against the automobile on a daily basis²⁹³ which places them as mobile minorities. Intersections facilitate auto-mobility over pedestrians via their design which prioritises vehicular flow over other forms of movement.²⁹⁴ The system of pedestrian separation structures in Uzunçayır where the token pedestrian mobility is architecturally forced, is illustrated in Figure 4.7.

²⁸⁵ Robertson, Susan, "Visions Of Urban Mobility: The Westway, London, England", 2007, pp. 74-91.

²⁸⁶ Gopakumar, Govind, "Who Will Decongest Bengaluru? Politics, Infrastructures & Scapes", 2013, pp. 304-325.

²⁸⁷ Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck, "The Inner City", 2000, pp.352-359.

²⁸⁸ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

²⁸⁹ Jensen, Ole B., "Mobilities Design: Cities, movements, and materialities ", 2020, pp. 295-303.

²⁹⁰ Guffin, Bascom, "Concrete Politics and Subversive Drivers on the Roads of Hyderabad, India", 2015, pp. 45-63.

²⁹¹ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

²⁹² Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

²⁹³ Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck, "The Inner City", 2000, pp.352-359.

²⁹⁴ Prytherch, David, "Rules Of The Road: Choreographing Mobility In Everyday Intersection", 2015, pp. 45-63.



Figure 4.7: Pedestrian Separation Structures in Uzunçayır Junction
Aytok Alkaya, 2022

Drivers are excused from social etiquette, and the automobile rudely interrupts the spaces of other movements. The movements of others are merely obstacles for the automobile that their seamless mobility is secured by carefully scripted junctions and roundabouts.²⁹⁵ The highways and other automobile spaces are free from obstacles like pedestrians by the administrative regulations and the spatial forms that are built by them.

Alker Tripp, as a police officer in London, suggested cordoning off the pavements from roadways with a steel guard rail in 1936. The aim of his project was to provide frictionless mobility for the automobile and to make better use of road space. He believed that ‘promiscuous’ pedestrian crossing should be prohibited and described his project as ‘segregation’. Tripp wanted to control the streets and govern how bodies use the space. David Rooney links Alker Tripps’s desires to his travel to the USA in 1934, where the American police culture of control was adopted after the

²⁹⁵ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

Prohibition era with ideas of racial segregation. Policing strategies toward public spaces are argued to be the expression of racialised and discriminative cultures that would isolate pedestrians who are seemed as impure and contagious.²⁹⁶

The conflict raised by the dichotomy of automobiles and pedestrians is avoided via large and complex structures of conduits in Uzunçayır. Recognising the vulnerabilities of bodily mobilities produced standardisations, manuals and systematic designs according to the circulation, connectivity, safety, accessibility etc. which forces a choreography determined by spatial flows and temporal rhythms.²⁹⁷ The interchanges or continuations of pedestrians' flow are achieved by pedestrian separation structures in strategic intersection nodes.

The pedestrian separation structures are static artefacts that seem like being inserted randomly into the urban fabric. Despite the intention of enabling people's movements, they subtly move and push 'unwanted bodies'. The application of these structures materialises mobility injustice by providing the connection between design, materials and power.²⁹⁸ Pedestrian overpasses, in reality, move pedestrians out of the way of speeding automobiles. They reinforce the domination of motorised means over people in cities by displacing them.²⁹⁹ The pedestrian separation structures, which enable crossing, impose a binary choice of mobility as making it possible or not.³⁰⁰ Any other activity or decision is not offered. They determine what forms of mobilities are facilitated rather than combining diverse forms of movement.

²⁹⁶ Rooney, David, "Keeping pedestrians in their place: Technologies of segregation on the streets of East London", 2018, pp. 120-136.

²⁹⁷ Prytherch, David, "Rules Of The Road: Choreographing Mobility In Everyday Intersection", 2015, pp. 45-63.

²⁹⁸ Jensen, Ole B., "Mobilities Design: Cities, Movements and Materialities", 2020, pp. 109-117.

²⁹⁹ *Pedestrian Bridges Make Cities Less Walkable. Why Do Cities Keep Building Them?*, Online Article, April 19, 2021.

³⁰⁰ Strohmayer, Ulf, "Bridges: Different conditions of Mobile possibilities", 2011, pp 119-135.



Figure 4.8: The Path
Umut Azad Akkel, 2022

Figure 4.8 shows 'The path' which is a participatory public installation presented by Umut Azad Akkel. The art project aims to discuss 'the paths we walk every day starting nowhere and leading nowhere' in the context of migration, gentrification and rapid urban transformation. The project reflects the artist's autobiographical experiences and struggles in urban life in Istanbul.³⁰¹ The metropole's struggles represented are experienced daily in Uzunçayır. Uzunçayır represents Istanbul's paths that go nowhere.

³⁰¹ *THE PATH: A participatory public art project*, Online Article, Oyoun Kultur NeuDenken, 2021



Figure 4.9: Overpass between the Metro Entrance and the University
Aytek Alkaya, 2022

Figure 4.9 shows the collage that was constructed to represent the pedestrian overpass between the metro entrance and the path to the Medeniyet University campus. The road in between the piers of the overpass is an off-ramp road of the elevated highway of D100, connecting it to the D100, the artery. Pedestrian separation structures are presented to be used for the safety of the pedestrians against the large, fast, metal automobile. They work as components of the system that includes smooth and sealed walkways, escalators, bridges, people conveyors and tunnels. These walking facilitating structures are designed according to efficiency. As with any other mobility structure, as discussed earlier, they control the direction and pace of pedestrian movements. They orchestrate the journey leading people to designated sites, restricting being anywhere else or physical communication.³⁰² Pedestrian bridges, tunnels and other conditions of frictionless movement, which replaced the crosswalks in mixed-use streets, are built for ‘improved’ pedestrian

³⁰² Edensor, Tim, “Moving through the City”, 2014, pp 121-140

safety but end up limiting pedestrian access³⁰³ and repositioning the pedestrians as mobile minorities.

Because of the hostile design of the structures, which offer longer, inaccessible and enforced routes, pedestrians often avoid using them and just cross the road underneath them. This risky behaviour results from the inconvenient or inadequate design of structures, as pedestrians make decisions based on the environment.³⁰⁴



Figure 4.10: Dangerous Shortcuts of Pedestrians
ATV, 2022

Pedestrians who don't use the determined conduits and pedestrian separation structures as their connectors were subjected to the news. Figure 3.10 shows the footage of the news broadcast. The anchor presents the news with this speech before they show the video of a reporter questioning people:

“This is Uzunçayır, one of the places where the passenger traffic is highest. There is an overpass for pedestrians to access the Metrobus station safely. But there is also danger. Because there are people who don't use the overpass and try to access the station through the road that is reserved for cars. It is not possible to understand

³⁰³ Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck, “The Inner City”, 2000, pp.352-359.

³⁰⁴ “Pedestrian Bridges Make Cities Less Walkable. Why Do Cities Keep Building Them?,” Online Article, April 19, 2021.

*why they take such a risk and why they endanger their lives? Yet, they all have their own reason and excuse.”*³⁰⁵

As people answer the sarcastic and accusatorial questions of the reporter with vague and unsure answers, the reporter counts the steps of the overpass to prove it offers easy access, with dramatic tunes being played in the background.

Walkers creating unofficial paths across the lands are referred to as ‘desire paths’ or ‘desire lines’. These traces are generated by people straying from the designated pathways and improvising other routes. The desire lines, which are understood as highlighting the failure of urban planning, reflect the tension between regulated walking circulations and personal forms of movement. These tactics resist the strategies of the rationalised city.³⁰⁶ The paths that pedestrians create reveal the absurdities of the mechanistic functioning of the city. Deconstructing the mobile norms by casual movements of people in the city produces an infinite variety of experiences and readings.³⁰⁷ Alternative crossings and connections are individually randomised within the freedom of the mind. They blur the spatial determinacy of surfaces and boundaries that regulate our mobility according to the rules of their programmes. The human traces of vestigial marking on worn-out surfaces make up the cities, rather than hardened surfaces of concrete and bitumen.³⁰⁸

Subtracting people from the city by pedestrian separating structures in order to prioritise the automobile creates an injustice for pedestrians and confirms that pedestrians are mobile minorities in the mobile hierarchy in terms of the right to the city. The design of the structures does not create an easier walking for people as it is not their main purpose, unlike how they are promoted.

³⁰⁵ ATV, *Yayaların tehlikeli kestirmesi*, News Broadcast, 05.01.2022.

³⁰⁶ Bates, Charlotte, “Desire Lines”, 2017, pp 55-69.

³⁰⁷ Edensor, Tim, “Moving through the City”, 2014, pp 121-140

³⁰⁸ Anderson, Benedict, *The City In Transgression*, 2021.

Instead of segregating people in 'safe' environments, it is recommended that automobiles should be made to behave and thoroughfares should facilitate all movements. Slowing down the automobile and adjoining it with other modes are argued to recapture a sense of belonging in cities.³⁰⁹ Removing the cars from public spaces is not recommended; rather, it needs to be tamed and slower by appropriate design of thoroughfares.³¹⁰ Jan Gehl agrees that integrating the automobile into pedestrian terms is a positive development. He discusses that the principle of slowing down the automobile was first introduced in Holland, where the automobile is allowed everywhere in the streets, which are designed as pedestrian spaces. The automobile would be forced to slow down and treated as guests in pedestrian spaces.³¹¹ The shared space is also discussed through the public space in Brighton, the UK. The relationship between pedestrians, cyclists, car drivers and other modes was re-imagined to use the same space with the slowed-downness of the automobile. This provides myriad and situated rhythms.

³⁰⁹ Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, 2004.

³¹⁰ Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck, "The Inner City", 2000, pp.352-359.

³¹¹ Gehl, Jan, *Life Between Buildings*, 2011.

5. MOBILE PLACE-MAKING

This section attempts to discuss the terms space and place to understand mobile place-making, question the relationship of mobile place-making with spatial experiences and illustrate the experiences in Uzunçayır. Firstly the terms are discussed through instants from Uzunçayır Walks videos that were filmed in Uzunçayır to document experiences which are presented in the Methods. Then how places are experienced through the body is discussed. Finally, Uzunçayır's material qualities are discussed in the context of allowing for place-making.

5.1. SPACE, PLACE AND MOBILE PLACE-MAKING

Although their use might be interchangeable occasionally, the terms space and place are fundamentally different. They might both occupy the exact boundaries, yet, they refer to different layers, which need to be discussed to study people's experiences.

Space refers to any void between solids from the atomic scale to universal. The emptinesses around protons and planets are spaces. It is an abstract and geometrical term.³¹² It is associated with time as they are two components to define any situation and happening. Places are specific types of spaces that include human aspects.

The place is occupied by inhabitants to live in it. Places are spaces that humans cultivate, alter, change, and mark. People personalise their places by inserting their culture and past and turn places into something to defend and protect as their private geographies.³¹³ Places are crucial contexts for daily practices and important centres of meaning as people link to them emotively. Activities and practices become meaningful in places as they give meaning to places. They are

³¹² Cresswell, Tim, *Place: An Introduction*, 2015.

³¹³ Augé, Marc, *Non-Places: Introduction to an Anthropology of Supermodernity*, 2006.

constructed, and they become known through meaning.³¹⁴ Being constructed socially means it can be changed by humans; places are social constructs because their materiality and meaning can be changed by people.³¹⁵ The segments of spaces are transformed into places by meaning as they are spaces of encounters of people with other people and other things.³¹⁶ The place is a human necessity. The existence of both depends on each other.³¹⁷ The place refers to appropriation and meaning that people give to specific spaces.³¹⁸ Places are unique, and broader social relations continually reproduce them. They don't have single identities as they contain several layers of constructs.³¹⁹ Each construct is personal, fragmentary and not visible to everyone. Their accumulation gives places character.³²⁰

Although spaces are visible and quantifiable and places are sensed and constructed through meaning, space is the more abstract term. The place is constructed by people, whereas space can exist without humans. The space can be given by physics or nature, or it can be created by people and be occupied by others as well. The main difference is that the place is intervenable by its occupiers socially or physically. Spaces might offer activities and practices, but they are not made by occupants. Spaces and places both have boundaries. They are limited. As mentioned earlier, the boundaries of space can be given, such as the space between electromagnetic fields and natural caves. They can be created by a designer, and they can be produced socially by people. The place can only be defined by people who are also the inhabitants.

³¹⁴ Kabachnik, Peter, "Nomads and mobile places: disentangling place, space and mobility", 2012, pp 210–228.

³¹⁵ Cresswell, Tim, *Place: An Introduction*, 2015.

³¹⁶ Kabachnik, Peter, "Nomads and mobile places: disentangling place, space and mobility", 2012, pp 210–228.

³¹⁷ Pop, Dana, "Three Approaches in Defining the Space-Place Relationship", 2014.

³¹⁸ Jiron, Paola, *Mobility on the Move: Examining Urban Daily Mobility Practices in Santiago de Chile*, Thesis, 2008.

³¹⁹ Massey, Doreen, "A Global Sense of Place", 1991.

³²⁰ De Certeau, Michel, "Walking in the City", 2007, pp 249-258.



Figure 5.1: Uzunçayır Walk 3, 1B
Aytek Alkaya, (Video), 2021

Figure 5.1 shows an instant in Uzunçayır where the terms of space and place can be discussed. The under-bridge is a space created by a designer and defined by physical boundaries. It might become a place, but it is identified as a space during this photograph because it lacks any social or emotive connection. On the other hand, three men, who seem to be taxi and minibus drivers, create a space socially by defining its limits by their bodies. This socially constructed space is a place for them as they are also the inhabitants of that space. Their connection to each other and the affect between them produce the place. Any other person wouldn't go through this place or be criticised if they did. This is why it would merely be a space for others. This shows that a limited volume can both be a space and a place.

The spaces can affect activities and experiences, but the relationship between place and people allows two-way interaction. In the process of architecture, the space offers more possibilities for design, and places necessitate questioning the existing socialities and maybe suggesting a new one. Being interested in the space or the place divides architectural approaches into two as space is open to experiments, but place requires considering the people's well-being and benefit.

Yi-Fu Tuan links the space to movement and the place to stops and pauses.³²¹ For him, place-making requires getting to know spaces by spending time in them. Each pause in movement makes it possible to transform locations into places.³²² The space is about movement, and the place is about stability and being fixed in a location.³²³



Figure 5.2: Uzunçayır Walk 7, 4B
Aytek Alkaya, (Video), 2021

The image taken from Uzunçayır Walk is given in Figure 5.2. It shows the Metrobus entrance, which is connected to the metro station. At the entrance, the street vendor creates a potential pause in mobility. It is a fixed location, at least during the analysis, that creates social encounters. Street vendors, vending machines, ticket scanning etc., are reasons for some of the pauses in Uzunçayır. They cause agglomerations that would lead to interaction. Even the disruptions of the mobility, such as security checks and waiting for the metro, cause clusters, which create places for a brief period of time.

³²¹ Cresswell, Tim, *Place: An Introduction*, 2015.

³²² Pop, Dana, "Three Approaches in Defining the Space-Place Relationship", 2014.

³²³ Kabachnik, Peter, "Nomads and mobile places: disentangling place, space and mobility", 2012, pp 210–228.

Yet, careful attention to nomadic practices shows that place can be produced through mobility. The place is not static. Places are conceptualised in terms of social relations, which are not motionless things.³²⁴ So the place, by its fundamental definition, is not a fixed situation. Mobility shapes places within and between them. It is not an isolated and autonomous entity; rather, it is fluid and interconnected to other places.³²⁵ Doreen Massey refers to places as 'events' because the process of place-making is not fixed or sudden.³²⁶ The event of place contains encounters and negotiations which occur through the changes in space and time. Mobile place-making is related to changing nature of urban life as it is about relations to places.³²⁷

As place-making requires encounters, walking is presented as the way of mobile place-making. Walking involves inevitable and various social encounters.³²⁸ Mobile bodies perform practices that would produce places by challenging and disrupting the normative order, function and roles of places by the tactics, routes, and paces of walking.³²⁹ When the world is considered a combination of places, attachments, connections, meaning and experience are seen.³³⁰ Networks of places facilitate various movements, which are also constituted through mobile practices, and the relationship of mobility and place constructs identities.³³¹ As the presence of more pedestrians leads to feelings of community and urban vibrancy, walkers are instrumental in creating cities.³³² Walking, as the fundamental mobile practice, creates places through the bodily experiences of the spaces and people. The nearer investigations of how the body experiences spaces and other bodies are conducted in the following section.

³²⁴ Massey, Doreen, "A Global Sense of Place".

³²⁵ Kabachnik, Peter, "Nomads and mobile places: disentangling place, space and mobility", 2012, pp 210–228.

³²⁶ Massey, Doreen, "A Global Sense of Place", 1991.

³²⁷ Jiron, Paola, *Mobility on the Move: Examining Urban Daily Mobility Practices in Santiago de Chile*, Thesis, 2008.

³²⁸ Pink, Sarah, "Walking With Video", 2007, pp. 240-252.

³²⁹ Kabachnik, Peter, "Nomads and mobile places: disentangling place, space and mobility", 2012, pp 210–228.

³³⁰ Cresswell, Tim, *Place: An Introduction*, 2015.

³³¹ Kabachnik, Peter, "Nomads and mobile places: disentangling place, space and mobility", 2012, pp 210–228.

³³² Calvert, Thomas, Juliet Jain, and Kiron Chatterjee, "When Urban Environments Meet Pedestrian's Thoughts: Implications for Pedestrian Affect," 2019, pp. 545–560.

5.2. WALKING

Walking basically is a motion that is accomplished by the whole body.³³³ It is the pure corporeal mobility between two locations, any spatial displacement of the body initiated by the person themselves.³³⁴ In this study, walking is approached as a practice that connects bodies to each other and to the material world. It is a quite busy and tiresome activity that requires open senses, engagements, negotiation and responses.

Tim Edensor considers walking a performance. The body is employed to perform the self of appearance, display and impression management. People adopt roles according to the social contexts that are dramaturgical with the practical knowledge that is located geographically and historically. Bodily movement is suggested to be a choreographed performance by which the bodies meaningfully communicate through movements.³³⁵

Walking is a performance that involves sensed comprehensions by observing, monitoring, remembering, listening and touching. The amount of information gathered during walking in ever-changing environment positions walking as a way of knowing.³³⁶ The knowledge produced by walking works in two ways; the walker observes and senses the places through walking, and also, walkers produce places by projecting information and emotion to spaces.

*“Each new day that I walk, the oak tree has changed slightly, the paintings on the sides of buildings have faded a tiny bit more, and the faces that met me only twenty-four hours earlier have grown older. The changes are too small to notice on a daily basis, it all takes place much too slowly, but because I walk, I know that it’s happening.”*³³⁷

³³³ Ingold, Tim, and Jo Lee Vergunst, "Introduction", 2008.

³³⁴ Kellerman, Aharon, *Personal Mobilities*, 2006.

³³⁵ Edensor, Tim, "Moving through the City", 2014, pp 121-140

³³⁶ Ingold, Tim, and Jo Lee Vergunst, "Introduction", 2008.

³³⁷ Kagge, Erling, *Walking: One Step at a Time*, Becky L. Crook, Translated, Pantheon Books, New York, 2019.

Cities are made up of walks, as Michel De Certeau conceptualises. The city is composed of texts that are written by walking. Pedestrians leave organic traces of their paths by transforming spatial elements which would become their unique texts.^{338,339} Walking is an embodied social practice. Walking, as a lived and practised act, reflects the social and cultural meanings and leaves distinct corporeal and material impressions.³⁴⁰ Walking through the city gives sensory impressions that contribute to the experience of being in a place. The practice of walking creates a continuous text that the communication through the texts would be a geographical experience.³⁴¹ Walking means moving through time and space and making a path that offers patterns of opportunities to encounter changes.³⁴² Encounters with others while walking mobilises a series of relational practices. Mobilities are rarely experienced alone or isolated. During the mobile practices, people submit themselves temporarily to become parts of a mobile collective.³⁴³

5.3. BODILY EXPERIENCES

People experience 'being in the world', which are active and embodied socialisation processes through bodies. Bodies produce places, whether staying in a place or moving through or between places. They cannot be reduced to passive objects; they engage in material and social practices. Places both write their own meaning upon places and are written upon by them.³⁴⁴

The body is approached as two separate systems when discussed in spatial studies. Being in the world is explained in accordance with these two aspects of the body. The body is defined as a concrete and material flesh structured with a skeleton system and contains organs, nerves and muscles.³⁴⁵ Also, it is identified as an

³³⁸ De Certeau, Michel, "Walking in the City", 2007, pp 249-258.

³³⁹ De Certeau, Michel, *The Practice of Everyday Life*, 2011.

³⁴⁰ Lorimer, Hayden, "Walking: New Forms and Spaces for studies of pedestrianism", 2011, pp 19-33.

³⁴¹ Kneale, James, "Reading novels as geographical research", 2003, pp. 55-68.

³⁴² Hodgson, Frances, "Structures of Encounterability: Space, Place, Paths and Identities", 2011, pp. 41-65.

³⁴³ Bissell, David, "Passenger mobilities: affective atmospheres and the sociality of public transport", 2010, pp 270-289.

³⁴⁴ Edensor, Tim, "Moving through the City", 2014, pp 121-140

³⁴⁵ Grosz, Elizabeth, "Bodies-Cities", 1998, pp. 31-38.

‘emotive’³⁴⁶ and ‘unique’³⁴⁷ consciousness that is meaningful, transformative, relational, ‘readable and social’³⁴⁸.

Brian Massumi³⁴⁹ refers to the body as a set of sensory surfaces that the emptiness on the inside is filled with experience. Although the body’s corporeal dimension, which is related to matter and energy, is in a fixed position or motion, the coinciding incorporeal dimension is in charge. The material body stands and moves, following the directions of the cognitive body. Tim Edensor³⁵⁰ states that the body is informed of presence and engagements to constitute a ‘being in the world’ by the senses, and the body becomes a means through which the world is experienced. Elizabeth Grosz³⁵¹ defines the body as an integrated and cohesive totality that contains physical and social inscriptions. The form of the physical body defines the limits of the psyche related to experience and subjectivity. It includes a set of socially coded meanings and significances provided by sociocultural environments. The built environment provides the context and coordinates for the form of the body. The body is connected to other bodies and objects. They are relational and territorialised.

The places are produced through spatial registers, as bodies are. They are made up of relationships. Bodies and places are woven together. Embodied subjects both make and are made of social and spatial relations.³⁵² Space is experienced by the body with an embodied and ‘more-than visual’ approach that includes a range of sensory-somatic and affective relations.³⁵³ The city is presented as a projection of the bodies. It is produced by the physical body and also by the consciousness of the body that has the capacity to design and plan ahead.³⁵⁴

³⁴⁶ Conradson, David, Alan Latham, "The Affective Possibilities of London: Antipodean Transnationals and the Overseas Experience", 2007, pp 231-254.

³⁴⁷ Nast, Heidi J., Steve Pile, "Making Places Bodies", 1998, pp. 1-14.

³⁴⁸ Grosz, Elizabeth, "Bodies-Cities", 1998, pp. 31-38.

³⁴⁹ Massumi, Brian, *Parables for the Virtual: Movement, Affect, Sensation*, 2002.

³⁵⁰ Edensor, Tim, "Moving through the City", 2014, pp 121-140

³⁵¹ Grosz, Elizabeth, "Bodies-Cities", 1998, pp. 31-38.

³⁵² Nast, Heidi J., Steve Pile, "Making Places Bodies", 1998, pp. 1-14.

³⁵³ Paterson, Mark, "More-than visual approaches to architecture. Vision, touch, technique", 2011, pp 263-281.

³⁵⁴ Grosz, Elizabeth, "Bodies-Cities", 1998, pp. 1-14

The physical and psychic bodies both have systems in constructing relations to other bodies and spaces. These are ways of being embodied and being in the world. Brian Massumi³⁵⁵ states that there are two operating systems for knowing your location physically, which are the visual system and the proprioceptive system. According to the vistas outside, the visual reference system allows people to understand where they are. This conscious orientation mechanism helps locate oneself within the visuals and configurations remembered like landmarks. The proprioception is a self-reference system that works as the habitual one as if one is on autopilot.

On the other hand, the psychic body incorporates itself into the world through an emotional and practical attitude.³⁵⁶ Collective feelings and affect connect the body to other bodies, spaces, and atmospheres emotionally and socially.³⁵⁷ The rest of the text will investigate the body's physical and psychic spatial relation systems separately, focusing on proprioception and affect.

5.3.1. The Physical Body

The relationship between body and space is an intertwined one. Bodies are integrated into spaces. Juhani Pallasmaa³⁵⁸ mentions that bodily reactions are inseparable parts of spatial experience. He also points out that a real spatial experience is approached, confronted, encountered, relational with the body and moved within, rather than just being seen as retinal images. Maurice Merleau-Ponty³⁵⁹ suggests that body and landscape are woven together by creating solid relationships. Sensed experience works as a communication method in the relationship between body and space. The body becomes a reference point in experiencing space by perceiving objects and environments and locating oneself in the scene.

³⁵⁵ Massumi, Brian, *Parables for the Virtual: Movement, Affect, Sensation*, 2002.

³⁵⁶ Merleau-Ponty, Maurice, "From the Phenomenology of Perception", 1945, pp 133-149.

³⁵⁷ Falconer, Emily, "Affect, emotion and communities in motion", 2017, pp. 143-154.

³⁵⁸ Pallasmaa, Juhani, "An Architecture of the Seven Senses", 2006, pp. 28-37.

³⁵⁹ Merleau-Ponty, Maurice, "From the Phenomenology of Perception", 2007, pp 133-149.

Mark Paterson³⁶⁰ discusses that space is experienced sensory-somatically, including haptic sensibilities. The somatosensory system formulates the internally felt bodily sensations and provides information about the positions of body parts, and allows the localisation of haptic senses. The embodied encounter with space is associated with the haptic system of the body that includes kinaesthesia, vestibular system and proprioception, which refer to the sense of movement, the sense of balance and felt position of the body in space, respectively. Proprioception is the most spatial sense as it is directly related to knowing the locations of body parts and near objects and material spaces.

Proprioception is identified as the sense that lets the body know itself by judging the position and motion of the body's movable parts, their relations together, and their alignments in space.³⁶¹ Proprioception, also referred to as the sixth sense, is the body's neuromuscular sense that makes people perceive joint and limb positioning by the feedback from different sensory components being fed to the central nervous system. The sensory receptors located in skin, joints and muscles allow identifying position and movement. Proprioception is critical in interacting with the surroundings.³⁶² Proprioception becomes observable in daily practices such as scratching an itch, brushing hair, being able to touch body parts without seeing, etc. Proprioception and the somatosensory system are greatly important in controlling and moving the body and connecting objects and environments.

Brian Massumi³⁶³ discusses the role of proprioception in orienting oneself in spaces. He questions how he can find his way through the complicated corridor system in his temporary office. The body, on autopilot, finds its way through twists and turns from the bodily memory without the support of visual memory of the whereabouts of the landmarks. Proprioception attunes to the movements of the body. It directly registers the displacement of parts of the body in relation to each other.

³⁶⁰ Paterson, Mark, "More-than visual approaches to architecture. Vision, touch, technique", 2011, pp 263-281.

³⁶¹ Paterson, Mark, "More-than visual approaches to architecture. Vision, touch, technique", 2011, pp 263-281.

³⁶² "Proprioception", Online Article, *Physiopedia*.

³⁶³ Massumi, Brian, *Parables for the Virtual: Movement, Affect*, 2002.

Proprioception helps us during movement by making us recognise the physical boundaries of spaces. It tells us on what surfaces or through what objects we can move. It measures the distances of material existing and helps us avoid undesired contact with them by controlling the body's speed, posture, or movement. This is how we know if we can move through the gap between two parked cars or how we can move through a crowd without bumping into each other.

Collective corporeal movement is often seen in performing arts. National Theatre (London) shares instructive video series to give drama studios and actors information about physical warm-ups and group exercises. One of these instructional videos³⁶⁴ focuses on 'moving through space'. As the participants move in space at different paces and routes, the instructor asks them to "fill all the gaps" and "use the entire space". As the exercise continues, they are asked to walk in grids, curves, and at different paces. The participants move in space on the routes of their choices, which are constituted by instant decisions about which direction and at what speed to go. As the conscious mind is busy making these decisions, proprioception makes bodies avoid hitting the walls and bumping into each other. When decisions stumble in drawing routes and directions because of the short time of decision making, some bodies come to the position of nearly bumping into each other in certain instants. Their routes intersect, and bodies are inclined to occupy the same space. At these near encounters, the proprioception warns the bodies and makes them revise the movement at the last minute, giving them just enough time to alter the bodies' shape, speed, or route. And the bodies slide off each other, avoiding clashes.

The proprioception's capacity to prevent clashes amongst bodies during movement is also observed in the phenomenon of sidewalk dance. Sidewalk dance (also referred to as sidewalk shuffle or footpath foxtrot) is defined as the situation when two people who are walking toward each other come face to face and when both people move in the same direction unintentionally whilst trying to avoid a

³⁶⁴ National Theatre, *An Actor's Warm-Up, Part Two*, 2014.

collision.³⁶⁵ People tend to give berth to other people whilst walking in order to avoid a collision. Typically, as explained above, we assess the spaces and move accordingly without thinking consciously with the help of proprioception through the somatosensory system. The sidewalk dance occurs when there is an error in the processing of sensory feedback³⁶⁶ and a lag in response time, leaving people locked in an oscillation. The conscious mind gets involved when the somatosensory system is on hold. Erving Goffman says that people send signals about their intentions about averting the collision in these situations.³⁶⁷ People try to adjust to each other to get out of the situation, but they end up mirroring each other's movements and shift in the same direction.³⁶⁸ The sidewalk dance usually ends when someone yields. Sometimes, the result can be executed flawlessly; sometimes, a 'brush' might occur.³⁶⁹

Proprioception, as a haptic sensory, plays a crucial role in being aware of our bodies and their relation to objects, spaces and other people. It manages the assessment of materialist existence and reactions to it consciously and unconsciously, such as fitting into physical boundaries, avoiding obstacles, and having an embodied experience in spaces. Proprioception, which is related to the physical body, collaborates with the psychic body, which is associated with the social aspect of being in the world. The psychic body and affect will be discussed in the rest of the text in the context of spatial embodiment.

³⁶⁵ Burgess, Georgie, *Science behind 'footpath foxtrot' or 'sidewalk shuffle' linked to brain's ability to predict future*, Website Article, 2019.

³⁶⁶ Maeda, Rodrigo S., Shawn M. O'Connor, J. Maxwell Donelan, Daniel S. Marigold, "Foot placement relies on state estimation during visually guided walking", 2017, pp 480-491.

³⁶⁷ Goffman, Erving, *Kamusal Alanda İlişkiler: Toplu Yaşamın Mikro İncelemeleri*, 2017.

³⁶⁸ Holohan, Meghan, *Researchers explain that awkward sidewalk dance we all do — and hate*, website article, Today News, 2018.

³⁶⁹ Curtis, Wayne, *The Last Great Walk: The True Story of a 1909 Walk from New York to San Francisco, and Why It Matters*, 2014.

5.3.2. The Psychic Body

Through the body, people connect to other people and their environments. As discussed above, the body is approached in two aspects when addressed in the context of embodiment. As the physical body manages haptic relationships with other bodies and spaces through the somatosensory system, the psychic body creates relationships with others psychologically through the help of affect.

Elizabeth Grosz considers the body as a physical organisation of flesh, nerves, and skeleton system that can only become a cohesive whole through the integration of psychical and social inscriptions. Although the physical body carries potential, it is incomplete. The surface defined by epidermal boundaries becomes a space for a psyche and defines the limits of experience and subjectivity when socially and culturally triggered. Socially coded meanings and significances make the body a meaningful, readable and in-depth entity. The psychically and socially produced body becomes an integral part of the social network and gets linked to others.³⁷⁰

Sara Ahmed defines emotion as the binder of the social body rather than coming from the individual body upon the ideas of Durkheim. Emotions interweave personal, cultural and social dimensions by aligning individuals with collectives and bodily space to spacial space. The emotional responses caused by contact with others connect bodies to bodies and create an attachment.³⁷¹ These connections are constructed through affect.

As a psychological term, affect is defined as something's ability to influence one's mind in a relational way to the body.³⁷² It works with behaviour and cognition in producing human experiences in social situations. Affect leads people to engage in behaviours that are constructed upon the given situation.³⁷³

³⁷⁰ Grosz, Elizabeth, "Bodies-Cities", 1998, pp. 31-38.

³⁷¹ Ahmed, Sara, "Collective Feelings: Or, the Impression Left by Others", 2004, pp 25-42.

³⁷² Barrett, Lisa Feldman, and Eliza Bliss-Moreau, "Affect as a Psychological Primitive," 2009, pp. 167-218.

³⁷³ Jhangiani, Rajiv, Hammond Tarry, *Affect, Behaviour and Cognition*, Online Book.

Clare Hemmings recognises that emotions are the manifestation or interpretations of affect. It is transferred amongst people contagiously like a yawn, smile or blush. It places an individual in a circuit of feelings and responses by giving depth to human existence through relations with others.³⁷⁴

David Conradson and Alan Latham define affect as the energetic outcome of encounters between bodies in particular places. It emerges through engagement and interactions as an outcome of emplaced encounters. Affect possesses collective and distributed properties because of moving between bodies across social and psychic fields. Affect leads to psychological transformations in bodies, generating changes in emotions that become visible via facial expressions.³⁷⁵

Affect doesn't only arise within a person; it can be transmitted from the outside via interactions with other people. The affective atmosphere or environment produced socially by the transmissions alters the psychologies of individuals.³⁷⁶ Affect can be considered as the emotion that occurs outside of the body in relation to other bodies, spaces, places, and atmospheres on a semi-conscious level, and it is embodied in contexts and practices.³⁷⁷ Affect is not optional. It has the capacity to alter the lived experience of being with others passively without engaging in intentional and active practices. People offer themselves up to become a part of the public.³⁷⁸ Affect marks a body's belonging to a world of encounters and forces momentary or sometimes more sustained passages.³⁷⁹

Affect created by encounters in a social setting have the power to change our emotions for positive and negative. It can extend the emotion and moods we have or reduce them. When we are in a neutral state, affect can assign emotions and moods. Affective fields and atmospheres change us by making us feel another way or

³⁷⁴ Hemmings, Claire, "Invoking Affect", 2005, pp 548-567.

³⁷⁵ Conradson, David, Alan Latham, "The Affective Possibilities of London: Antipodean Transnationals and the Overseas Experience", 2007, pp. 231-254.

³⁷⁶ Brennan, Teresa, *The Transmission of Affect*, 2004.

³⁷⁷ Falconer, Emily, "Affect, emotion and communities in motion", 2017, pp. 143-154.

³⁷⁸ Bissell, David, "Passenger mobilities: affective atmospheres and the sociality of public transport", 2010, pp. 270-289.

³⁷⁹ Seigworth, Gregory J., Melissa Gregg, "An Inventory of Shimmers", 2010, pp 1-25.

exaggerating what we already feel. Affect is an important phenomenon in understanding how people are connected and need each other.

People have an instinctive desire to be accepted and fit in. Being included in a social group is securing. Affect, which eventually makes us feel similar emotions to other people, is a way of being a part of society. Lack of affect causes feeling lonely, and we accept the affect, whether positive or negative. Repeating what David Bissell³⁸⁰ says, which was mentioned earlier, people offer themselves up to become a part of the public.

Nursev Irmak Demirbaş³⁸¹ talks about her experience in her bodily performance in a parking lot. She begins talking about the performance by asking ‘how do you start to move?’. She says she started moving by trying to let out the existing feelings and emotions. She was preoccupied with the anxiety of how she was perceived when she realised she was moving in a way that her body knew from dancing. This makes her feel out of context. She defines the performance as scary and anxious for two reasons; it was scary to start moving without a context, and anxiety of being judged by others because of doing something different than what they are doing.

The reason why Nursev Irmak Demirbaş was scared and anxious before and during the performance could be explained by the affect. When she started moving by trying to let her existing emotions go out, she thought there wasn’t any affect that she could get into. She had to initiate the affect and take responsibility for this affect’s consequences on other people. Then during the performance, she feels anxious because she realises that there was already an affect produced by the space itself and into which people were forced to get. As Peter Merriman³⁸² puts it, parking spaces are not static and still infrastructures; rather, they are complex environments that gather and resonate with multiple affect and atmospheres. Nursev’s self-initiated

³⁸⁰ Bissell, David, “Passenger mobilities: affective atmospheres and the sociality of public transport”, 2010, pp. 270-289.

³⁸¹ Demirbaş, Nursev Irmak, Gülşah Aykaç, “Bir Dünyaya Dönüş Tasarısı”, Online Article, *Manifold*, 20.03.2022.

³⁸² Merriman, Peter, “Mobility Infrastructures: Modern Visions, Affective Environments and the Problem of Car Parking”, 2016, pp. 83–98.

affect was not the same as the existing one. She was contradictory to the dominating affect, which explains why she might have felt anxious.

Affect is involved in experiencing a precise situation in time and space. Affect as an embodied experience is embedded in spaces that arise from the presence of elements.³⁸³ Affect, which is constituted between a body and its surrounding, is deeply entangled in the space itself that only occurs with the presents of objects. Objects, elements and spaces release impulses leading to irritation or fascination that influence people. The spatial elements that trigger and inspire thoughts can have positive and negative affects.³⁸⁴ Affect does not only operates in-between bodies and environments on a non-conscious level; it actively creates relations that bring corporeal and material together.³⁸⁵ Therefore affect is a critical binding force amongst people and between people and spaces. It contributes to the sense-making of spaces through social connections.



Figure 5.3: Uzunçayır Walk 3, 2B
Aytek Alkaya, (Video), 2021

³⁸³ Brinks, Verena, "Situated Affect and Collective Meaning: A Community Perspective on Processes of Value Creation and Commercialization in Enthusiast-Driven Fields," 2016, pp. 1152-1169.

³⁸⁴ Calvert, Thomas, Juliet Jain, and Kiron Chatterjee, "When Urban Environments Meet Pedestrian's Thoughts: Implications for Pedestrian Affect", 2019, pp. 545-560.

³⁸⁵ Dekeyser, Thomas, "The Material Geographies of Advertising: Concrete Objects, Affective Affordance and Urban Space", 2018, pp. 1425-1442.

Some spaces generate certain affects that are related to local ecologies. They reflect how people, buildings, technologies, etc., come together in geographic settings. This emerges affective fields.³⁸⁶ The pathway between the Metrobus station and bus ranks in Uzunçayır (shown in Figure 5.3) primarily offers only one way of experience, which is to walk at a faster pace with other people without active socialisation. The lack of active interaction between individuals makes people seek affective communications or emerging affective atmospheres.³⁸⁷ Then people often follow the coordinated choreography because of the peer pressure and the desire to conform to the group norms.³⁸⁸

³⁸⁶ Conradson, David, Alan Latham, "The Affective Possibilities of London: Antipodean Transnationals and the Overseas Experience", 2007, pp 231-254.

³⁸⁷ Bissell, David, "Passenger mobilities: affective atmospheres and the sociality of public transport", 2010, pp 270-289.

³⁸⁸ Edensor, Tim, "Moving through the City", 2014, pp 121-140

5.4. NON-PLACE

Places are relational and meaningful; they have identities and are produced by human experiences. Marc Augé defines spaces which don't fit into these definitions as non-places.³⁸⁹ As every space doesn't allow people to interact, only some spaces can be transformed into places. Places might not be continuous but produced sparsely. In this case, places have spaces between them.³⁹⁰ These spaces are non-places. When spaces and cities are designed as sprawled organisations, places are scattered, and their connections which are called circulation spaces, are non-places when they offer only motion.

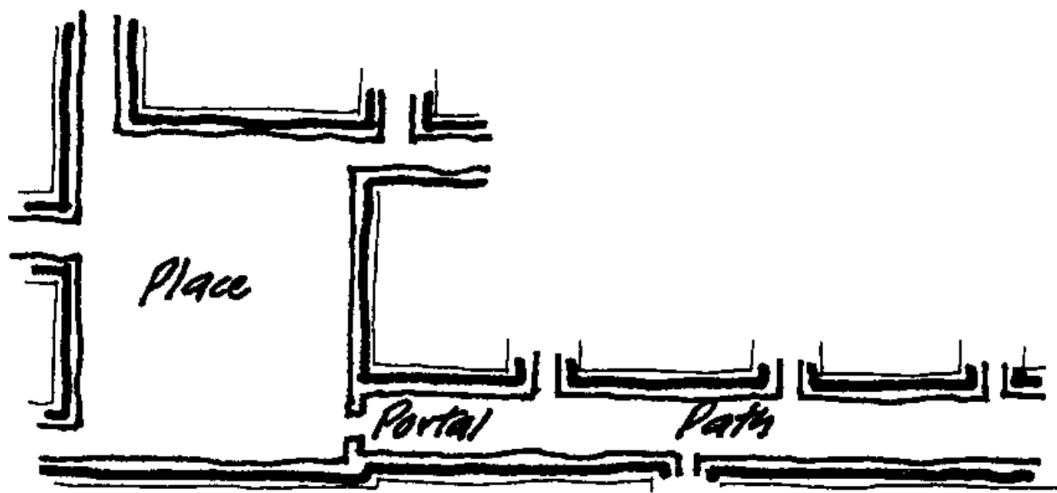


Figure 5.4: Place, Portal, Path
Edward T. White, 2006

The image in Figure 5.4 represents Edward T. White's categorisation of places, portals and paths.³⁹¹ The diagram reflects the highways between neighbourhoods in cities and pedestrian separation structures between hubs and destinations on a smaller scale. These circulation spaces are non-places as they are not *placified* due to the lack of meaning and interaction but impose only passing-by. Ole B. Jensen defines the embodied mobile practices, which are determined by plans, strategies, policies etc., through material spaces with a 'from above' understanding as

³⁸⁹ Augé, Marc, *Non-Places: Introduction to an Anthropology of Supermodernity*, 2006.

³⁹⁰ Cresswell, Tim, *Place: An Introduction*, 2015.

³⁹¹ White, Edward T., "Path-Portal-Place", 2006, pp 187-196.

‘stage mobilities’. Multiple decisions people make while walking according to sensory engagements are limited in staged mobilities.³⁹² Separating path, portal, and place causes staged mobilities. Paths become just functional routes that connect places together when imaginative places are not produced via meaningful sensorial experience.³⁹³ Jensen also critiques this categorisation because such categorisation of movement spaces and staying spaces means spaces can only have one purpose and one interpretation.³⁹⁴

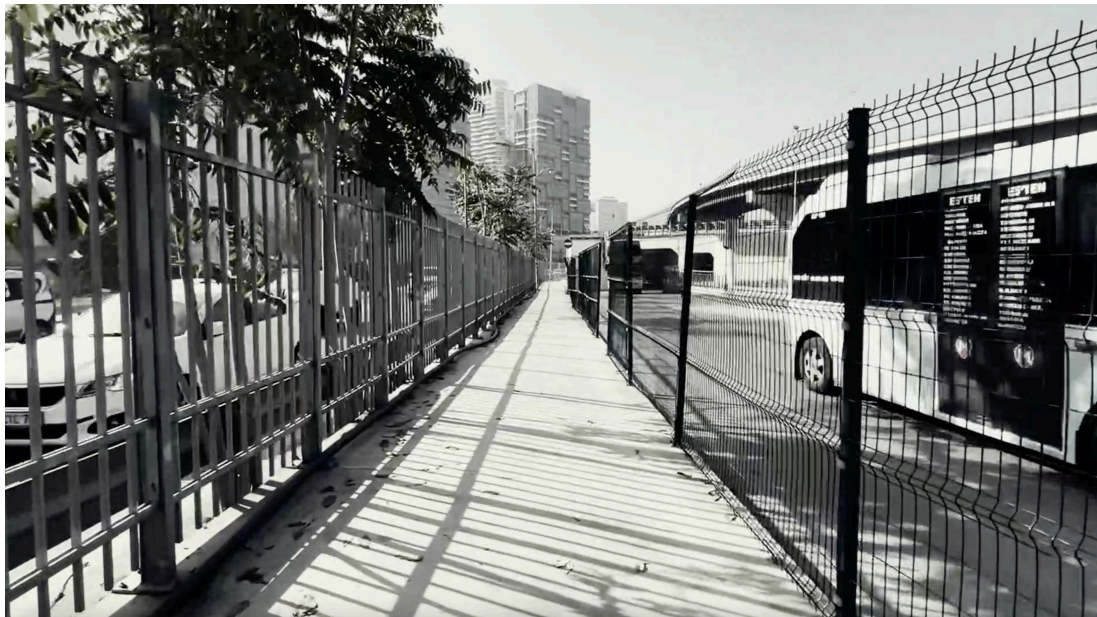


Figure 5.5: Uzunçayır Walk 1, 3A
Aytek Alkaya, (Video), 2021

Although meaning overlays the material form when producing places through practices and assumptions, spaces also produce actions. The spatial form influences movement. When the form channels movement, it erases other memories and identities by constraining performance and meaning.³⁹⁵ The physically bounded pathway between the metro entrance and bus rank in Uzunçayır, which is shown in Figure 5.5, is an example of how material space constrains and determines movement. The pathway, as a linear space, allows only two-way corporeal

³⁹² Jensen, Ole B., Ditte Bendix Lanng and Simon Wind, “Artefacts, affordances and the design of mobilities”, 2017, pp. 143-154.

³⁹³ Pink, Sarah, "Walking With Video", 2007, pp. 240-252.

³⁹⁴ Jensen, Ole B., "Negotiation In Motion: Unpacking A Geography Of Mobility", 2010, pp. 389-402.

³⁹⁵ Edensor, Tim, “Moving through the City”, 2014, pp 121-140

movement. The structural and infrastructural contexts are needed to enact mobility, yet their directing and limiting capacities contain the mobility and obstruct the potential for myriad experiences.³⁹⁶ The restriction of experiences indicates that the pathway is a non-place.



Figure 5.6: Uzunçayır Walk 5, 3A
Aytek Alkaya, (Video), 2021

The pedestrian separation structures that include pathways and stairs organise and stage the mobilities and experiences even more distinctly. The fenced pathway enforces the type of movement, but the structures in Figure 5.6 determine every instant of movement by steps, angled surfaces, fences and unknown directions to which the paths direct. The materiality of places are contexts for social life, and they contribute to the constitution of urban living. It mediates people's relationships by continuous negotiation between bodies.³⁹⁷ When diverse and dynamic street choreographies are encouraged to generate face-to-face interaction that would bring people together and support socialisation³⁹⁸, movements are channelled and separated in Uzunçayır, reducing the place to a transit space.

³⁹⁶ Cresswell, Tim, Peter Merriman, "Introduction", 2011.

³⁹⁷ Bates, Charlotte, "Desire Lines", 2017, pp 55-69.

³⁹⁸ Edensor, Tim, "Moving through the City", 2014, pp 121-140



Figure 5.7: Uzunçayır Walk 1, 2A
Aytek Alkaya, (Video), 2021

Moving in public space is not merely transportation; it is a way of mobile place-making which depends on many factors encountered on the way, such as the pavement type and behaviour of other people. Spaces for walking also need to offer conditions for lingering, pausing, and participating in social and recreational activities, rather than just enabling people to come and go.³⁹⁹ The fenced surface onto which the metro tunnel escalates people is shown in Figure 5.7. Although the space has a great potential to be a square, there aren't any children playing or people sitting on benches. Places where nobody wants to be, reduce the opportunities for activities to support encounters between people. Public spaces disintegrate when nothing happens in them. They become non-places instead of contributing to social life.⁴⁰⁰

³⁹⁹ Bates, Charlotte, "Desire Lines", 2017, pp 55-69.

⁴⁰⁰ Bates, Charlotte, "Desire Lines", 2017, pp 55-69.

5.5. KINAESTHETIC EXPERIENCES

Human beings need certain levels of information input and certain perceptual rates to process information and make sense of the world, including being in spaces. The city provides sensory and perceptual information.⁴⁰¹ The encounters of material and cultural characteristics of the space define sensorial experiences, which then affect emotional responses.⁴⁰² The stimulation generated by the space matters significantly during mobile practices as the kinaesthetic awareness of the body orients the perception.⁴⁰³ The sensory apparatus is adapted to the speed of human movements, which is limited to approximately 5 km per hour at the horizontal motion.⁴⁰⁴ The ‘image repertoire’, which is evolved accordingly to the speed of movement, helps people to pick out information and distinguish stimulation.⁴⁰⁵ The range of perceptual input is essential for information processing in relation to a maximum rate of usable information. The number of noticeable differences per unit time that spaces provide is called complexity. Although the preferred level of arousal is related to one’s background, culture, activity and context, the complexity needs to be moderated to create an experience between chaotic and monotonous.⁴⁰⁶ Complexity is an essential criterion in measuring the spaces’ affordance of walkability, which was discussed earlier through thoroughfare types.

Walking and driving require different levels of complexity because perception's ability to process information requires a certain amount of time which is related to speed. When speed is increased, a reasonable amount of time to see and perceive details and activities decreases and the stimulation would be too high to comprehend.⁴⁰⁷ On the other hand, moving slowly in a space with a low complexity level designed for faster speed would cause perceiving the same information for too

⁴⁰¹ Grosz, Elizabeth, “Bodies-Cities”, 1998, pp. 31-38.

⁴⁰² Murray, Lesley, Susan Robertson, “Drawing mobile shared spaces: Brighton bench study”, 2017, pp. 211-224.

⁴⁰³ Borden, Iain, *Drive: Journeys Through Films, Cities And Landscapes*, 2012.

⁴⁰⁴ Gehl, Jan, *Life Between Buildings*, 2011.

⁴⁰⁵ Edensor, Tim, “Moving through the City”, 2014, pp 121-140

⁴⁰⁶ Rapoport, Amos, *History And Precedent In Environmental Design*, 1990.

⁴⁰⁷ Gehl, Jan, *Life Between Buildings*, 2011.

long, leading to boring and unengaged experiences. These experiences are observed in Uzunçayır as they would be in any walking practice in a circulation space designed for the automobile.

Driving demands utmost alertness. Looking into the mirrors, observing the road through the windscreen, predicting and judging the actions and movements, and taking actions accordingly are vitally important.⁴⁰⁸ The driver concerns only about the destination; they perceive only what they need to see, which is the materialised road. Increased speed reinforces drivers to focus on the distant view.⁴⁰⁹ Because of the high speed, the ability to perceive local details, socialising and seeing the world is lost.⁴¹⁰ The automobile creates a filter between the driver and the space in which the car moves. Because driving is an inactive experience that dilutes the environmental senses and limits vision⁴¹¹, it is associated with television as they both offer an inactive and one-way communication.^{412,413}

Highways aims to provide an eased mobility with less friction and complexity. Highways are smoothened surfaces where obstacles are removed, ensuring ease of movement.⁴¹⁴ Highways as spaces that are flattened out, confined to surfaces and to single planes, which causes a reduction in the three-dimensionality of the space.⁴¹⁵ Reliance on the automobile caused cities to become duller and more monotonous.⁴¹⁶ The look of urban spaces that offer movement became neutral because any street activity and complexity would be a distraction as motion became the only function.⁴¹⁷ The highway is identified as a motion channel and a vector because they are dedicated to high velocity.⁴¹⁸ Being vector spaces, not offering

⁴⁰⁸ Merriman, Peter, "Driving Places", 2004, pp. 145-167.

⁴⁰⁹ Schivelbusch, Wolfgang, *The Railway Journey*, 2014.

⁴¹⁰ Sheller, Mimi, and John Urry, "The City And The Car", 2000, pp. 737-757.

⁴¹¹ Borden, Iain, *Drive: Journeys Through Films, Cities And Landscapes*, 2012.

⁴¹² Morse, Margaret, *Virtualities : Television, Media Art, And Cyberculture*, 1998.

⁴¹³ Gehl, Jan, *Life Between Buildings*, 2011.

⁴¹⁴ Anderson, Benedict, *The City In Transgression*, 2021.

⁴¹⁵ Lefebvre, Henri, *The Production Of Space*, 1991.

⁴¹⁶ Gehl, Jan, *Life Between Buildings*, 2011.

⁴¹⁷ Sennett, Richard, *Ten Ve Taş*, 2018.

⁴¹⁸ Morse, Margaret, *Virtualities : Television, Media Art, And Cyberculture*, 1998.

stimulation or activity, not allowing integration to the spaces but rather reducing spatiality into two dimensions through the medium of windscreen cause highways to be accused of being the real non-places.^{419,420,421}



Figure 5.8: Uzunçayır Walk 5, 5B
Aytek Alkaya, (Video), 2021

The pure sensory experience of encountering the world at high speed disconnects the relationship between the body and the spaces around it. Objects appear differently when viewed from the automobile.⁴²² The complexity in the ‘enclaves and armatures’⁴²³ around the highway is constructed to be perceived by the automobile's speed. As pedestrian separation structures and other pathways reserved for walking were inserted into the flattened, neutral and frictionless highway, they inherited the level of complexity which was calculated according to the kinematic nature of driving, where objects are divorced from their original context and function.⁴²⁴ The horizontal component of the highway, which is the road, is the surface that needs to be flattened the most for the automobile. In Uzunçayır, the

⁴¹⁹ Merriman, Peter, "Driving Places", 2004, pp. 145-167.

⁴²⁰ Borden, Iain, *Drive: Journeys Through Films*, 2012.

⁴²¹ Augé, Marc, *Non-Places: Introduction to an Anthropology of Supermodernity*, 2006.

⁴²² Borden, Iain, *Drive: Journeys Through Films*, 2012.

⁴²³ Jensen, Ole B., "Flows of Meaning, Cultures of Movements – Urban Mobility as Meaningful Everyday Life Practice," 2009, pp. 139–158.

⁴²⁴ Borden, Iain, *Drive: Journeys Through Films, Cities And Landscapes*, 2012.

carriageways and frontages of D100, and connection roads, which are separated from each other with flat vertical elements to form the conduits, occupy an extensive area, as seen in Figure 5.8. People are placed in these non-contextual, frictionless non-places and forced to experience them only through the body's abilities of perception and affect.

The body needs to move through grain for a more sensorially aware experience. Moments of confrontation, negotiation and self-displacement, which are caused by disruption and friction, awaken the senses.⁴²⁵ Experiencing buildings, objects, and other people offer attractive stimuli.⁴²⁶



Figure 5.9: Uzunçayır Walk 6, 1B
Aytek Alkaya, (Video), 2021

Flattening the topography by designing smooth and sealed surfaces and forming straight lines and right angles generates linear movement. Not offering any natural interruption causes seamless human automation, making human mobility a non-responsive practice to unexpected changes. It breaks the connection between humans and nature by autonomy, increasing the loss of traces.⁴²⁷ The pathway shown

⁴²⁵ Edensor, Tim, "Moving through the City", 2014, pp 121-140

⁴²⁶ Gehl, Jan, *Life Between Buildings*, 2011.

⁴²⁷ Anderson, Benedict, *The City In Transgression*, 2021.

in Figure 5.9 lacks the complexity that contributes to the autonomous movement of people, which only affords a passive and unaware experience.



Figure 5.10: Uzunçayır Walk 4.2, 4A
Aytek Alkaya, (Video), 2021

These residual spaces that are left out from surfaces for the automobile movement were enacted at a scale beyond the human body. The sculptural qualities of these structures are felt overpowering by the individual view. The range of sensory input offered creates autonomous practices that cause people to develop insulation from the spaces.⁴²⁸ The isolated structures become repulsively flat, sharp-edged, immaterial and unreal due to the loss of tactility and scale for details crafted for the human body⁴²⁹, as shown in Figure 5.10. The failure of spaces in Uzunçayır to provide a humane level of complexity makes public spaces not appeal to people's sensibilities by creating a situational relatedness between the body and spaces.⁴³⁰ The spaces created for the speediness of everyday life prohibit the relationship produced by intricate social encounters.⁴³¹

⁴²⁸ Robertson, Susan, "Visions Of Urban Mobility: The Westway, London, England", 2007, pp. 74-91.

⁴²⁹ Pallasmaa, Juhani, "An Architecture of the Seven Senses", 2006, pp. 28-37.

⁴³⁰ Anderson, Benedict, *The City In Transgression*, 2021.

⁴³¹ Murray, Lesley, Susan Robertson, "Drawing mobile shared spaces: Brighton bench study", 2017, pp. 211-224.

The spaces are transformed into places through social encounters, meaning, attachment and mobilities. In order for this transformation to happen, spaces need to offer a certain amount of detail, texture and grain so that people can connect to them through their mobile bodies and create an embodied relationship. The complexity is needed for bodily practices, as the physical sensory triggers the emotive experience. The automobile's speed requires less complexity for the driver to be focused on the road as going somewhere and the motion itself matter the most. The issue is that the pedestrians are obligated to perform walking in the spaces created for the scale, speed and complexity needs of the automobile. The pedestrian spaces in Uzunçayır are long, under-stimulative and overpowering because they are located in the spaces that are leftovers from berths for the automobile's manoeuvres. The highway offers great auto-mobility with seamless flat concrete surfaces, yet it doesn't offer any character for bodies to be able to engage and respond to.

6. CONCLUSION

The thesis explores the pedestrians' experiences of *walking in the highway* (spaces), including the matters directly related to walking and highways through a multilayered, multi-scaled and multi-disciplined research. The comprehensive approach to research initiated discussions about methodologies of how architectural studies can be rationalised and methods of how time, space and movement can be represented, as well as contributing knowledge about the city's relationship with mobility, thoroughfare formations, the spatiality of highways, mobile practices imposed through design, experiencing places bodily to the literature on mobilities.

The initial research revealed that the city is constituted through mobilities, although its material fabric is constructed statically. Urbanisation, which is the procedure of taming geographies for people's purposes and needs, includes standardisation and materialisation of the social, cultural, and political mobilities.

The mobile city is transformed gradually and variously by the influence of technological advancements that affected the abilities and mobile cultures of people. Every stage of its evolution is statically embroidered onto the world's geographies, illustrating traces of various politics and cultures based on the affordances of their adopted mobilities. Compact development and urban sprawl as the most accepted plans are visible today in cities, presented as contrasting academically in terms of mobilities they offer.

The compact plan is inherited from the cities where the only transportation was achieved by walking. The nearer places and mixed programmes produced streets. Besides being mobility spaces, streets offer stays, socialisation, memories, and individual attachments as they allow mobile place-making, which is achieved through walking. Walking in the streets is essential because it allows pedestrians to designate their unique routes, combinations of which give places character.

Designers like Le Corbusier suggested automobile-centric cities in the early 20th century that neglected mobile place-making, which streets in compact morphologies allow. Automobile's broad use triggered the formation of urban sprawl where isolated places are scattered, and their connection is provided by urban highways. Highways are produced only for speed, and their sole purpose is to transmit travellers as seamless as possible. Since arriving at the destination as speedily as possible is the most important purpose, the qualities of the spaces the highway goes through don't matter. This caused the formation of empty, non-place, residual spaces.

Istanbul's morphology, which is formed by *urbanisation types* of both compact development and urban sprawl, caused the city to have a circulation network consisting of streets and highways. The scattered functions required adjoining the *thoroughfare types* of streets and highways to provide seamless mobility for people. The thoroughfares were connected by large infrastructures of connection roads and junctions, rendering an administratively and practically challenging road network.

Motorways are communication technologies used to provide access between distant proximities. Because they connect further places, they are often located on the fringes of the cities. The first motorway in Türkiye went around the urban centre of Istanbul, which included Fatih, Beyoğlu, Kadıköy and Üsküdar, whilst passing through Istanbul. Istanbul's urbanisation growing towards the North encompassed E5, and it became an urban highway located in the middle of the city. The urbanisation of the only highway, growth in population, and policies regarding international connections caused the construction of another motorway, called E80 (includes O-2, O-3 and O-4). E5 went under the administrative authority of Istanbul Metropolitan Municipality, which led to its renaming to D100.

Further urbanisation, the entanglement of compact and sprawled plans, and the requirement to provide access to people who don't own cars legislated policies about introducing public transportation and pedestrian occupation to D100. The

section of D100 between Uzunçayır and Tuzla is identified as an artery administered by the Istanbul Metropolitan Municipality, which is a classification that includes streets according to *the road hierarchy*. The rest of D100 in Istanbul is identified as a highway and managed by the Istanbul Metropolitan Municipality, while the rest of the road is managed by the General Directorate of Highways. As an exception, D100's section that is located on the bridge in Bosphorus is qualified as a motorway and governed by the General Directorate of Highways. Uzunçayır holds a unique position as the artery section and highway section of D100 intersect here via the largest junction in Türkiye. The placement of Metrobus and metro stations, bus and minibus rank in Uzunçayır makes it an ideal field for investigations about mobility modes and practices that a highway offers.

As the city's materialistic base was discussed so far, the research on Uzunçayır is conducted on the urban scale and focuses on practices performed by people. These discussions are based on mobilities research and how it approaches urban movements. *Mobilities* suggest there are political, cultural, social, etc., aspects of the ability to move. The reason and ease of movements that make up the *politics of mobility* are studied in terms of who moves willingly and who has access to mobility. Mobile justice or injustice is secured by the friction, disruption and obstacles experienced during mobility. The *rhythm* rendered by the movements in Uzunçayır, and how they are separated from each other by *conduits* are discussed. The movements are obligated to stay in individual conduits through the enforcement of infrastructures for orchestrating and rationalising movements. Although the daily urban mobility modes include the Metrobus, metro, buses, and minibuses, this research focuses on the dichotomy of the automobile and the pedestrian, as public transportation is assumed to be a part of pedestrian conduits.

The intersections of mobility conduits impose a hierarchy between modes as they prioritise one conduit over another. As the adoption of the automobile as the primary mobility mode in highway systems, the artificial infrastructure scape prioritises the automobile and aims to give it seamless mobility. In the encounters of

the automobile and the pedestrian, which are designated and restricted by the *pedestrian separation structures*, the pedestrians always lose the negotiation. The power, strength and speed of the automobile are perceived as one-sided violence against pedestrians which makes them mobile minorities. The urban fabric and mobility spaces shaped by prioritising the automobile's body and speed impose a pre-determined walking practice on pedestrians who perform corporeal mobility and how they limit pedestrians' manifold and unique experiences. The restriction on people about their walking limits their right to the city, options of planning routes as they desire and freedom to walk through spaces they feel connected. As the freedom of leaving traces in infinite alternatives shared spaces offer to people is not provided in structures of the car-age city, people draw unofficially improvised lines of walking as they desire.

Walking is a method of *mobile place-making* that turns spaces into places which are constructed socially, perceptively and emotively through the body. Humans build embodied relationships with places through proprioceptive perception and affective senses. *Kinaesthetic experiences* are discussed through the auto-ethnographic videos recorded in Uzunçayır. Film-making was chosen as the in-situ data collecting method, as it is the only medium that can represent the motion itself that is produced through mobility practices, without neglecting the instants in-between of what is shown as chronophotography or collages would.

The pedestrian separation structures, which are located in the residua from infrastructures of speed and motion, don't afford relational and meaningful engagements, therefore becoming non-places. Lack of stimulation, complexity and social encounters in these flattened and neutralised spaces cause people to have pre-determined and identical experiences that are dictated by the materiality of the architecture.

BIBLIOGRAPHY

- ‘Access Management’, Image, in Mike Spack, *The Dos and Don’ts of Access Management*, Website Article, <http://www.mikeontraffic.com/dos-donts-access-management/>. Accessed on 13.02.2022
- ‘The Hierarchy of Roads’, Image, 2004, in Wikipedia, *Road Hierarchy*, Website Article, https://en.wikipedia.org/wiki/Road_hierarchy. Accessed on 13.02.2022
- A Nested Hiererachy of Roads*, Image, <https://www.flickr.com/photos/22392855@N08/5579570926>, accessed on 30.05.2022.
- Alkaya, Aytek and Hülya Aybek, “Urban Green in the Process of Vertical Growth", in SUDEP’16, International Sustainable Development on Economy and Planning Conference, DAKAM, 2016.
- CNU, ‘Street Networks 101’, Website Article, *Congress for the New Urbanism*, <https://www.cnu.org/our-projects/street-networks/street-networks-101>, Accessed on 10.03.2022.
- Department for Transport, UK, *Guidance on road classification and the primary route network*, Report, 13.03.2021. <https://www.gov.uk/government/publications/guidance-on-road-classification-and-the-primary-route-network/guidance-on-road-classification-and-the-primary-route-network#fnref:2>. Accessed on 10.03.2022.
- Döker, Mehmet Fatih, *İstanbul Kentsel Büyüme Sürecinin Belirlenmesi, İzlenmesi ve Modellenmesi*, Phd Thesis, İstanbul University, 2012.
- Eppell, Tony, Brett McClurg, and Jonathan Bunker, ‘A Four Level Road Hierarchy for Network Planning and Management’ in Proceedings 20th ARRB Conference, 2001, Melbourne.
- Tümerdem, Nazlı, *İstanbul Walkabouts: A Critical Walking Research of Northern Istanbul*, PhD Thesis, İstanbul Technical University, 2018.
- Yandex Maps, Sancaktepe, Digital Map, <https://yandex.com.tr/harita/107756/sancaktepe/?ll=29.241379%2C40.994367&z=11.01>, Accessed on 01.06.2022.
- ‘State highway’, *The Free Dictionary*, <https://www.thefreedictionary.com/State+Road>. Accessed on 13.02.2022
- "TEM - Transport - UNECE", *Unece.Org*, n.d. <https://www.unece.org/trans/main/tem.html>, Accessed on 25.04.2020
- "Thoroughfare (N.)", *Online Etymology Dictionary*. https://www.etymonline.com/word/thoroughfare#etymonline_v_30605. Accessed on 10.02.2022
- “Highway”, *Cambridge Dictionary*. <https://dictionary.cambridge.org/dictionary/english/thoroughfare>. Accessed on 10.02.2022.
- “Highway”, *Merriam-Webster Dictionary*. <https://www.merriam-webster.com/dictionary/highway>. Accessed on 13.02.2022

- “Kadıköy-Kartal Metro Hattı”, Map, in Yıldırım Gökaya, *Kadıköy Kartal arası metro durakları seyahat süreleri ne kadar?*, News Article, Emlak Rotası, 28.08.2012. <https://www.emlakrotasi.com.tr/kadikoy-kartal-arasi-metro-duraklari-seyahat-sureleri-ne-kadar/>. Accessed on 11.02.2022
- “Pedestrian Bridges Make Cities Less Walkable. Why Do Cities Keep Building Them?,” Online Article, *Institute for Transportation and Development Policy*, April 19, 2021. <https://www.itdp.org/2019/10/01/pedestrian-bridges-make-cities-less-walkable-why-do-cities-keep-building-them/>. Accessed on 15.04.2022.
- “Proprioception”, Online Article, *Physiopedia*, <https://www.physio-pedia.com/Proprioception>, Accessed on 30.03.2022.
- “Road”, *Oxford Learner’s Dictionaries*. <https://www.oxfordlearnersdictionaries.com/definition/english/road>. Accessed on 10.02.2022.
- “Robert Moses”, Online Encyclopaedia Entry, in *Britannica*, <https://www.britannica.com/biography/Robert-Moses>. Accessed on 03.05.2022.
- “Street vs Road”, *Woodward English*. <https://www.vocabulary.cl/english/street-road-difference.htm>. Accessed on 11.02.2022.
- “Street”, *Cambridge Dictionary*. <https://dictionary.cambridge.org/dictionary/english/street>. Accessed on 11.02.2022.
- “Yeni Metrobüs Hatları Tüm Metrobüs Durakları ve Metrobüs Haritası”, Map, in Ray Haber, *Yeni Metrobüs Hatları Tüm Metrobüs Durakları ve Metrobüs Haritası*, News Article, İstanbul, 2014. <https://rayhaber.com/2020/04/yeni-metrobus-hatlari-tum-metrobus-duraklari-ve-metrobus-haritasi/yeni-metrobus-hatlari-tum-metrobus-duraklari-ve-metrobus-haritasi-2/>. Accessed on 11.02.2022
- AA, *Kadıköy’de Uzunçayır Kavşağı Viyadük İnşaatı*, News Article, 2019. <https://www.sabah.com.tr/yasam/kadikoyde-uzuncayir-kavsagi-viyaduk-insaati-4588221>. Accessed on 07.02.2022
- AA, *Uzunçayır İETT Peron Alanı Hizmete Girdi*, News Article, 24.02.2017. <https://www.haberler.com/uzuncayir-iETT-peron-alani-hizmete-girdi-9300673-haberi/>. Accessed on 17.02.2022.
- Addie, Jean-Paul D., “Towards a City-Regional Politics: In Between Critical Mobilities and the Political Economy of Urban Transportation”, in Julie Cidell and David Prytherch (ed.), *Transport, Mobility, And The Production Of Urban Space*, 1st ed., Routledge: Taylor and Francis, New York and London, 2015, pp. 45-63.
- Ahmed, Sara, "Collective Feelings: Or, the Impression Left by Others", *Theory, Culture and Society*, Vol. 21 No. 2, 2004, pp 25-42.
- Akşam, *Kadıköy-Fikirtepe İmar ve Ulaşım Yol Ortak Altyapı İnşaatında çalışmalar hızla devam ediyor*, News Article, 10.04.2019, <https://www.aksam.com.tr/foto-galeri/yasam/kadikoyfikirtepe-imar-ve-ulasim-yol-ortak-altyapi-insaatinda-calismalar-hizla-devam-ediyor-49845/>. Accessed on 05.04.2022.

- Alpert, Geoffrey P. , Roger G. Dunham, Meghan Stroshine, Katherine Bennett and John MacDonald , *Police Officers' Decision Making and Discretion: Forming Suspicion and Making a Stop*, Online Report, The National Institute of Justice, the US, 2006, <https://www.ojp.gov/pdffiles1/nij/grants/213004.pdf>, Accessed on 01.05.2022.
- Anderson, Benedict, *The City In Transgression*, 1st ed., Routledge: Taylor and Francis, London, New York, 2021.
- Appleyard, Donald, Kevin Lynch, and John Myer, *The View From The Road*, Joint Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University, Massachusetts, 1964.
- ATV, *Yayaların tehlikeli kestirmesi*, News Broadcast, 05.01.2022, <https://www.atv.com.tr/gun-ortasi-bulteni/yayalarin-tehlikeli-kestirmesi/ozelvideo/izle>. Accessed on 05.04.2022.
- Augé, Marc, *Non-Places: Introduction to an Anthropology of Supermodernity*, John Howe (translated), Verso, London, 2006.
- Banham, Reyner, Los Angeles: The Architecture of Four Ecologies, Lane, London, 1971.
- Barrett, Lisa Feldman, and Eliza Bliss–Moreau, “Affect as a Psychological Primitive,” *Advances in Experimental Social Psychology*, Vol. 41, Elsevier, 2009, pp. 167–218.
- Bates, Charlotte, “Desire Lines”, in Charlotte Bates, Alex Rhys-Taylor (Eds), *Walking Through Social Research*, Routledge:Taylor and Francis, New York, Oxon, 2017, pp 55-69.
- Bates, Charlotte, Alex Rhys-Taylor, “Finding Our Feet”, in Charlotte Bates, Alex Rhys-Taylor (Eds), *Walking Through Social Research*, Routledge:Taylor and Francis, New York, Oxon, 2017, pp 1-11.
- Bay, Joo Hwa Philip, and Steffen Lehmann, "Compact Urban Form, Density And Sustainability", in Joo Hwa Philip Bay and Steffen Lehmann (ed.), *Growing Compact: Urban Form, Density And Sustainability*, 2017, pp. 3-22.
- Bissell, David, “Passenger mobilities: affective atmospheres and the sociality of public transport”, in *Environment and Planning*, Vol. 28, 2010, pp 270-289.
- Bizim Yaka, *D100'de Hız Limiti Yükseltildi*, news article, 13.09.2019. <https://www.bizimyaka.com/haber/3112947/d-100de-hiz-limiti-yukseltildi>. Accessed on 16.02.2022.
- Borden, Iain, *Drive: Journeys Through Films, Cities And Landscapes*, Reaktion Books, 2012.
- Bradford City, ‘Proposed Street Hierarchy’, map, in *Urban Design Guidance*. <https://www.bradford.gov.uk/media/3036/citycentredesignguide.pdf>. Accessed on 11.02.2022.
- Brennan, Teresa, *The Transmission of Affect*, Cornell University Press, 2004.
- Brinks, Verena, “Situated Affect and Collective Meaning: A Community Perspective on Processes of Value Creation and Commercialization in Enthusiast-Driven Fields,” *Environment and Planning A: Economy and Space*, Vol. 48, No. 6, 2016, pp. 1152-1169.

- Burgess, Georgie, *Science behind 'footpath foxtrot' or 'sidewalk shuffle' linked to brain's ability to predict future*, Website Article, ABC News, 2019, <https://www.abc.net.au/news/2019-01-12/why-we-do-the-footpath-dance-to-avoid-collision/10704998>, Accessed on 02.04.2022.
- Butler-Kisber, Lynn, "Collage As Inquiry", in J. Gary Knowles and Ardra L. Cole (ed.), *Handbook of The Arts In Qualitative Research*, Sage, 2008, pp. 265-276.
- C, Melanie, "What Do The Road Colors In Google Maps Mean?", *Techwalla*, n.d. <https://www.techwalla.com/articles/what-do-the-road-colors-in-google-maps-mean>. Accessed on 31.01.2021
- Calthorpe, Peter, "The Regional City", in Donald Watson, Alan Plattus and Robert Shibley (ed.), *Time Saver Standards For Urban Design*, The McGraw-Hill Companies, Inc., 2003.
- Calvert, Thomas, Juliet Jain, and Kiron Chatterjee, "When Urban Environments Meet Pedestrian's Thoughts: Implications for Pedestrian Affect," *Mobilities*, Vol. 14, No. 5, 2019, pp. 545–560.
- Calvert, Thomas, Juliet Jain, and Kiron Chatterjee, "When Urban Environments Meet Pedestrian's Thoughts: Implications for Pedestrian Affect," *Mobilities* Vol. 14, No. 5, 2019, pp. 545–560.
- Cass, Noel, Karolina Doughty, James R Faulconbridge, and Lesley Murray, "Ethnographies Of Mobilities And Disruptions", Research Councils UK Energy Programme, 2015, p.21.
- Cass, Noel, Karolina Doughty, James R Faulconbridge, and Lesley Murray, "Ethnographies Of Mobilities And Disruptions", Research Councils UK Energy Programme, 2015, p.41
- Chantry, Erin, *Urban Designer Series: Robert Moses*, Online Article, in SmartCitiesDive, <https://www.smartcitiesdive.com/ex/sustainablecitiescollective/urban-designer-series-robert-moses/54826/>, Accessed on 03.05.2022.
- City of Flagstaff, *Thoroughfare Types*, 2011. https://www.flagstaff.az.gov/DocumentCenter/View/14710/Chap10-60_SpecifictoThoroughfares_Final2011Nov1?bidId=.
- CNU, 'Street Networks 101', Website Article, *Congress for the New Urbanism*, <https://www.cnu.org/our-projects/street-networks/street-networks-101>, Accessed on 10.03.2022.
- Conradson, David, Alan Latham, "The Affective Possibilities of London: Antipodean Transnationals and the Overseas Experience ", in *Mobilities*, Vol. 2, No. , 2007, pp 231-254.
- Cook, Simon, "Rushing, dashing, scrambling: The role of the train station in producing the reluctant runner " in Spinney, Justin, Suzanne Reimer, Philip Pinch (Eds), *Mobilising Design*, Routledge: London, 2017, pp. 62-75.
- Cresswell, Tim, "Tim Cresswell: On Rhythm", Lecture, University of Vienna - Research Platform Mobile Cultures and Societies, 2021, https://www.youtube.com/watch?v=R-SEcfi_9c. Accessed on 05.03.2022.

- Cresswell, Tim, "Politics Of Mobility", Video, in *Mobile Lives Forum*, 2013. <https://www.youtube.com/watch?v=HQgwwIEennpA> , Accessed on 02.02.2020.
- Cresswell, Tim, *On The Move*, Routledge: Taylor and Francis, New York, 2006.
- Cresswell, Tim, Peter Merriman, "Introduction", in Tim Cresswell, Peter Merriman (Eds), *Geographies of Mobilities: Practices, Spaces, Subjects*, Ashgate, 2011.
- Cresswell, Tim, *Place: An Introduction*, 2nd ed., Wiley, West Sussex, 2015.
- Cullen, Gordon, *The Concise Townscape*, 15th ed., Elsevier, Architectural press, Oxford, 2006.
- Curtis, Wayne, *The Last Great Walk: The True Story of a 1909 Walk from New York to San Francisco, and Why It Matters*, Rodale Books, 2014.
- Davis, Mike, *City Of Quartz*, Vintage Books, New York, 1992.
- De Certeau, Michel, " Walking in the City", in Margaret Lock, Judith Farquhar (Eds), *Beyond the Body Proper: Reading the Anthropology of Material Life*, Duke University Press, 2007, pp 249-258.
- De Certeau, Michel, *The Practice Of Everyday Life*, Steven Rendall, Translated, University of California Press, Berkeley, Calif., 1984.
- Dekeyser, Thomas, "The Material Geographies of Advertising: Concrete Objects, Affective Affordance and Urban Space," *Environment and Planning A: Economy and Space*, Vol. 50, No. 7, 2018, pp. 1425–1442.
- Demir, Seylan, *Polisin Temel Hak ve Özgürlükleri Kısıtlayan Yetkilerinin Kullanılmasında Değerlendirme Sorunları*, Thesis, Maltepe University, 2013.
- Demirbaş, Nursev Irmak, Gülşah Aykaç, "Bir Dünyaya Dönüş Tasarısı", Online Article, *Manifold*, 20.03.2022, <https://manifold.press/cozulme>, Accessed on 04.04.2022.
- Department for Transport, UK, *Guidance on road classification and the primary route network*, Report, 13.03.2021. <https://www.gov.uk/government/publications/guidance-on-road-classification-and-the-primary-route-network/guidance-on-road-classification-and-the-primary-route-network#fnref:2>. Accessed on 10.03.2022.
- Department of Transport, UK, *Motorways, The Highway Code*, Report, 2022. <https://www.gov.uk/guidance/the-highway-code/motorways-253-to-273>.
- DHA, 'Metrobüste operasyon', News Article, in *Cumhuriyet*, 2016, <https://www.cumhuriyet.com.tr/haber/metrobuste-operasyon-polisi-gorunce-kacmaya-basladi-563504>, Accessed on 01.05.2022.
- Doughty, Karolina, and Lesley Murray, "Discourses Of Mobility: Institutions, Everyday Lives And Embodiment", *Mobilities*, Vol. 11, No. 2, 2014, pp. 303-322.
- Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck, "The Inner City", 2000, in Matthew Carmona and Steve Tiesdell (Eds), *Urban Design Reader*, Elsevier: Architectural Press, pp.352-359.
- Edensor, Tim, "Moving through the City", in David Bell, Azzedine Haddour (Eds), *City Visions*, Routledge: Taylor and Francis, London and New York, 2014, pp 121-140

- Ellenbogen, Josh, "Camera And Mind", *Representations*, Vol. 101, No. 1, 2008, pp. 86-115.
- Enright, Theresa, "Transit Justice as Spatial Justice: Learning from Activists," *Mobilities*, Vol. 14, No. 5, 2019, pp. 665–680.
- Ewing, Reid, and Otto Clemente, *Measuring Urban Design: Metrics For Livable Places*, Island Press, Washington, 2013.
- Ewing, Reid, and Shima Hamidi. *Measuring Sprawl and Validating Sprawl Measures*. Metropolitan Research Center, University of Utah, Salt Lake City, 2014.
- Falconer, Emily, "Affect, emotion and communities in motion " in Spinney, Justin, Suzanne Reimer, Philip Pinch (Eds), *Mobilising Design*, Routledge: London, 2017, pp. 143-154.
- Fliedner, Dietrich, *Society In Space And Time*, Selbstverlag des Geographischen Instituts der Universität des Saarlandes, Saarbrücken, 1981.
- Gehl, Jan, *Life Between Buildings*, Jo Koch (translated), Island Press, Washington, DC, 2011.
- Gilpin, Heidi, "Lifelessness In Movement, Or How Do The Dead Move? Tracing Displacement And Disappearance For Movement Performance", in Susan Leigh Foster (ed.), *Corporealities*, 2nd ed., Routledge, USA and Canada, 2005, pp. 109-133.
- Goffman, Erving, *Kamusal Alanda İlişkiler: Toplu Yaşamın Mikro İncelemeleri*, M. Fatih Karakaya, Translated, Heretik, Ankara, 2017.
- Google Maps, *İstanbul*, Digital Map, 2022. <https://www.google.com/maps/@41.1510117,29.0847546,102360m/data=!3m1!1e3>
- Gopakumar, Govind, "Who Will Decongest Bengaluru? Politics, Infrastructures & Scapes," *Mobilities*, Vol. 10, No. 2, 2013, pp. 304–325.
- Graham, Stephen, and Simon Marvin, *Splintering Urbanism*, Routledge, London, 2001.
- Grava, Sigurd, *Urban Transportation Systems: Choices For Communities*, The McGraw-Hill Companies, 2004.
- Gros, Frederic, *A Philosophy of Walking*, John Howe (Translated), Verso: London, New York, 2014
- Grosz, Elizabeth, "Bodies-Cities" in Nast, Heidi J., Steve Pile (Eds), *Places through the Body*, Routledge, London, 1998, pp. 31-38.
- Guffin, Bascom, "Concrete Politics and Subversive Drivers on the Roads of Hyderabad, India", in Julie Cidell and David Prytherch (ed.), *Transport, Mobility, And The Production Of Urban Space*, 1st ed., Routledge: Taylor and Francis, New York and London, 2015, pp. 45-63.
- Günay, Baykan, "Gestalt Theory and City Planning Education", *METU JFA*, Vol. 24, No. 1, 2007, pp. 93-113. http://jfa.arch.metu.edu.tr/archive/0258-5316/2007/cilt24/sayi_1/93-113.pdf.

- Hall, Edward Twichell, *The Hidden Dimension*, 4th ed., Anchor Books, New York, 1990.
- Hanson, Susan, "Transportation Geographies and Mobilities Studies: Toward Collaboration", in Julie Cidell and David Prytherch (ed.), *Transport, Mobility, And The Production Of Urban Space*, 1st ed., Routledge: Taylor and Francis, New York and London, 2015, pp. 45-63.
- Hart, Julian, *Towns and Cities: Function in Form : Urban Structures, Economics and Society*, Routledge: Abingdon, 2021.
- Hart, Julian, *Towns and Cities: Function in Form*, Ashgate, 2015.
- Harvey, David, *Postmodernliğin Durumu*, Sungur Savran (translated), 7th ed., Metis, İstanbul, 2014.
- Hemmings, Claire, "Invoking Affect", in *Cultural Studies*, Routledge, Vol. 19, No. 5, 2005, pp 548-567.
- Highways England, Transport Scotland, Llywodraeth Cymru Welsh Government and Department for Infrastructure of An Roinn Bonneagair, 'Road Layout Design' in *Design Manuel for Roads and Bridges*, Report, www.standardsforhighways.co.uk. Accessed on 13.02.2022.
- Hine, Julian, "Mobility And Transport Disadvantage", in Margaret Grieco and John Urry (Eds.), *Mobilities: New Perspectives On Transport And Society*, Ashgate publishing limited, 2011, pp. 21-40.
- Hodgson, Frances, "Structures of Encounterability: Space, Place, Paths and Identities ", in Margaret Grieco and John Urry (ed.), *Mobilities: New Perspectives On Transport And Society*, ashgate publishing limited, 2011, pp. 41-65.
- Holohan, Meghan, *Researchers explain that awkward sidewalk dance we all do — and hate*, website article, Today News, 2018, <https://www.today.com/health/sidewalk-dance-when-pedestrians-keep-stepping-way-t137227>, Accessed on 02.04.2022.
- Hurducaş, Iulia, "An Urban View on the Someş River", Competition Beta, 2016.
- İmar Panosu, *Fikirtepe-Ünalan Kavşağı, Optimist Residence'ye Yaradı*, New Article, 06.08.2018, <https://imarpanosu.com/fikirtepe-unalan-kavsagi-optimist-residenceye-yaradi/>, Assessed on 04.05.2022.
- Ingold, Tim, and Jo Lee Vergunst, "Introduction", in Tim Ingold and Jo Lee Vengurst (ed.), *Ways Of Walking: Ethnography And Practice On Foot*, Routledge, 2008.
- Ingold, Tim, and Jo Lee Vergunst, "Introduction", in Tim Ingold and Jo Lee Vengurst (Eds), *Ways Of Walking: Ethnography And Practice On Foot*, Routledge, 2008.
- Istanbul Metropolitan Municipality and Japan International Cooperation Agency, *The Study on Integrated Urban Transportation Master Plan for Istanbul Metropolitan Area in the Republic of Türkiye, Chapter 3*, Report, January 2009.
- Istanbul Metropolitan Municipality, 'Park Et Devam Et Otoparkları', Website Article, *ISPARK*, <https://ispark.istanbul/projeler/park-et-devam-et/>, Accessed on 25.04.2022.

- Istanbul Metropolitan Municipality, "Rail System Network", in *İstanbul Şehir Haritası*, Digital Map. <https://sehirharitasi.ibb.gov.tr>
- Istanbul Metropolitan Municipality, *Beşiktaş İlçesi Anaarter Güncelleme Paftası*, Map, 2009. <https://ulasim.ibb.istanbul/wp-content/uploads/2019/12/ukome-2009-8-1-BEsiKTAs.pdf>. Accessed on 12.02.2022.
- Istanbul Metropolitan Municipality, *Fikirtepe Kavşağı İstanbul'a Bayram Hediyesi Oldu*, News Article, 20.08.2021. <https://ibb.istanbul/arsiv/38022/fikirtepe-kavsagi-istanbula-bayram-hediyesi-o>. Accessed on 04.05.2022.
- Istanbul Metropolitan Municipality, *İstanbul Şehir Haritası*, Digital Map, <https://sehirharitasi.ibb.gov.tr>.
- Jacobs, Allan B, *Great Streets*, MA: MIT Press, Cambridge, 1993.
- Jacobs, Jane, *The Death And Life Of Great American Cities*, Random House, Inc., New York, 1961.
- Jensen, Ole B., "'Facework', Flow And The City: Simmel, Goffman, And Mobility In The Contemporary City", *Mobilities*, Vol. 1, No. 2, 2006, pp. 143-165.
- Jensen, Ole B., "Mobilities Design: Cities, movements, and materialities ", in Ole B. Jensen, Claus Lassen, Vincent Kaufmann, Malene Freudendal-Pedersen and Ida Sofie Gøtzsche Lange (ed.), *Handbook of Urban Mobilities*, 1st ed., Routledge: Taylor and Francis, 2020, pp. 295-303.
- Jensen, Ole B., "Negotiation In Motion: Unpacking A Geography Of Mobility", *Space And Culture*, Vol. 13, No. 4, 2010, pp. 389-402.
- Jensen, Ole B., "Urban Design For Mobilities – Towards Material Pragmatism", *Urban Development Issues*, Vol. 56, No. 4, 2018, pp. 5-11.
- Jensen, Ole B., "Flows of Meaning, Cultures of Movements – Urban Mobility as Meaningful Everyday Life Practice," *Mobilities* Vol. 4, No. 1, 2009, pp. 139–158.
- Jensen, Ole B., "Mobilities Design: Cities, Movements and Materialities", in Ole B. Jensen, Claus Lassen, Vincent Kaufmann, Malene Freudendal-Pedersen and Ida Sofie Gøtzsche Lange (Eds), *Handbook of Urban Mobilities*, Routledge, 2020, pp. 109-117.
- Jensen, Ole B., Ditte Bendix Lanng and Simon Wind, "Artefacts, affordances and the design of mobilities" in Spinney, Justin, Suzanne Reimer, Philip Pinch (Eds), *Mobilising Design*, Routledge: London, 2017, pp. 143-154.
- Jhangiani, Rajiv, Hammond Tarry, *Affect, Behaviour and Cognition*, in *Principles of Social Psychology*, Online Book, <https://opentextbc.ca/socialpsychology/front-matter/preface/>, Accessed on 03.04.2022.
- Jiron, Paola, *Mobility on the Move: Examining Urban Daily Mobility Practices in Santiago de Chile*, Thesis, London School of Economics and Political Science, 2008.

- Joh, Kenneth, Marlon G. Boarnet, Mai Thi Nguyen, William Fulton, Wally Siembab, and Susan Weaver, "Accessibility, Travel Behavior, And New Urbanism", *Transportation Research Record: Journal Of The Transportation Research Board*, Vol. 2082, No. 1, 2008, pp. 81-89.
- Joh, Kenneth, Marlon G. Boarnet, Mai Thi Nguyen, William Fulton, Wally Siembab, and Susan Weaver, "Accessibility, Travel Behavior, and New Urbanism," *Transportation Research Record: Journal of the Transportation Research Board* Vol. 2082, No. 1, 2008, pp. 81-89.
- Jovink & The Voederbietels, *An De Kant*, song, Tante Riky Records, 1998. Accessed on <https://music.apple.com/us/album/an-de-kant/1542127134?i=1542127137>.
- Kabachnik, Peter, "Nomads and mobile places: disentangling place, space and mobility", in *Identities: Global Studies in Culture and Power*, Vol. 19, No. 2, 2012, pp 210-228.
- Kagge, Erling, *Walking: One Step at a Time*, Becky L. Crook, Translated, Pantheon Books, New York, 2019.
- Kartal 24, *İstanbul'da Şehir İçi Hız Sınırı 2022*, news article, 30.12.2021. <https://www.kartal24.com/42853-istanbulda-sehir-ici-hiz-siniri-degisti>. Accessed on 16.02.2022.
- Kellerman, Aharon, *Personal Mobilities*, Routledge, New York, 2006.
- Kılıç, Ali, "From the Highway to an Urban Arterial Road: The Change of E-5 Corridor Planning Decisions" in *Mimarist*, 63, 41, pp 37-45.
- Kneale, James, "Reading novels as geographical research" in, David Pinder, Alison Blunt, Pyrs Gruffudd, Jon May, Miles Ogborn (Eds), *Cultural Geography in Practice*, Hodder Arnold, 2003, pp. 55-68.
- Kropf, Karl, *The Handbook Of Urban Morphology*, John Wiley & Sons, Incorporated, Hoboken, 2017.
- Küçük, Salim, and Şebnem Yüzer, "The Growth And Development Of Metropolitan Planning Strategies In Istanbul", *Congress Of The European Regional Science Association*, 1998.
- Law Insider, "Local Street Definition", Website Article. <https://www.lawinsider.com/dictionary/local-street>. Accessed on 11.02.2022.
- Le Corbusier, *The Radiant City*, Pamela Knight, Eleanor Levieux, and Derek Coltman (contribute), Orion Press, New York, 1967.
- Lefebvre, Henri, *Rhythmanalysis*, Stuart Elden and Gerald Moore (translated), 4th ed., Continuum, London, New York, 2007.
- Lefebvre, Henri, *The Production Of Space*, Donald Nicholson-Smith (translated), Blackwell, Oxford, 1991.
- Lefebvre, Henri, *The Urban Revolution*, University of Minnesota Press, Minneapolis, 2006.
- Lefebvre, Henri, *Writings on Cities*, Blackwell, Oxford, 1995.

- Lehmann, Steffen, "The Challenge of Transforming Low-Density City into a Compact City", in Joo Hwa Philip Bay and Steffen Lehmann (ed.), *Growing Compact: Urban Form, Density And Sustainability*, 2017, pp. 3-22.
- Lord, Dominique, and James A. Bonneson, "Development Of Accident Modification Factors For Rural Frontage Road Segments In Texas", *Transportation Research Record: Journal Of The Transportation Research Board*, Vol. 2023, No. 1, 2007, pp. 20-27.
- Lorimer, Hayden, "Walking: New Forms and Spaces for studies of pedestrianism ", in Tim Cresswell, Peter Merriman (Eds), *Geographies of Mobilities: Practices, Spaces, Subjects*, Ashgate, 2011, pp 19-33.
- Lynch, Kevin, *What Time Is This Place?*, MIT Press, 1976.
- Lyon, Dawn, "Doing Audio-Visual Montage To Explore Time And Space: The Everyday Rhythms Of Billingsgate Fish Market", *Sociological Research Online*, Vol. 21, No. 3, 2016, pp. 57-68.
- Lyon, Dawn, *Billingsgate Fish Market*, Video, 2013. https://www.youtube.com/watch?v=nw_kf32GfHY , Accessed on 06.01.2020.
- Lyon, Dawn, *What Is Rhythmanalysis?*, Video, 2015. https://www.youtube.com/watch?v=_dZC0ra-_HE , Accessed on 06.01.2020.
- Madanipour, Ali, "A Critique of Public Space: Between Interaction and Attraction", in Vikas Mehta and Danilo Palazzo (Eds), *Companion to Public Space*, Taylor and Francis, 2020, pp 7-15.
- Maeda, Rodrigo S., Shawn M. O'Connor , J. Maxwell Donelan , Daniel S. Marigold, "Foot placement relies on state estimation during visually guided walking", in *J Neurophysiol*, No. 117, Vol. 2, 2017, pp 480-491.
- Map Box, *Studio*, Digital Map, <https://studio.mapbox.com/styles/aytya/ckvpa4rq15uf414pi1l64wcjq/edit/#15.75/40.999446/29.058012>, Accessed on 06.06.2022.
- Marsh, Peter Edward, and Peter Collett, *Driving Passion*, Jonathan Cape, London, 1986.
- Martire, Agustina, Anna Skoura, and Hannah Miskimmon, *Gentle Densities: The Potential of Sustainable Gentle Density, Mixed Use, Mixed Tenure And Public Participation In Future Housing In Belfast*, Department For Communities Housing And Regeneration Divisions And The Engaged Research, Queen University Belfast 2021.
- Martire, Agustina, Anna Skoura, Hannah Miskimmon, Koto Design, *Gentle Densities*, report, Department for Communities Housing and Regeneration Divisions and Queen's University Belfast, 2021.
- Massey, Doreen, "A Global Sense of Place", in *Marxism Today*, 1991, <https://banmarchive.org.uk/marxism-today/june-1991/a-global-sense-of-place/>, Accessed on 21.03.2022.
- Massumi, Brian, *Parables for the Virtual: Movement, Affect, Sensation*, Duke University Press, 2002.

- McGrath, Brian, and Grahame Shane, "Introduction: Metropolis, Megalopolis And Metacity", in C. Greig Crysler, Stephen Cairns and Hilde Heynen (ed.), *The Sage Handbook Of Architectural Theory*, SAGE, 2012, pp. 641-656.
- Meier, Allison, "The Scientist Who Shot His Photos With A Gun And Inspired Futurism", Blog, *Hyperallergic*, 2015. <https://hyperallergic.com/197464/the-scientist-who-shot-his-photos-with-a-gun-and-inspired-futurism/>, Accessed on 10.12.2021.
- Merleau-Ponty, Maurice, "From the Phenomenology of Perception", 1945, in Margaret Lock, Judith Farquhar (Eds), *Beyond the Body Proper: Reading the Anthropology of Material Life*, Duke University Press, 2007, pp 133-149.
- Merriman, Peter, "Driving Places", *Theory, Culture & Society*, Vol. 21, No. 4-5, 2004, pp. 145-167.
- Merriman, Peter, "Mobility Infrastructures: Modern Visions, Affective Environments and the Problem of Car Parking," *Mobilities*, Vol. 11, No. 1, 2016, pp. 83–98.
- Minton, Anna, "Why Are Fear And Distrust Spiralling In Twenty-First Century Britain?", Report, *Joseph Rowntree Foundation*, 2008. Accessed on <https://www.jrf.org.uk/report/why-are-fear-and-distrust-spiralling-twenty-first-century-britain>.
- Minton, Anna, *Ground Control*, Penguin Books, London, 2009.
- Morse, Margaret, *Virtualities : Television, Media Art, And Cyberculture*, Indiana University Press, Bloomington, 1998.
- Murray, Lesley, "The Walking Commute: Gendered and Generationed", in Ole B. Jensen, Claus Lassen, Vincent Kaufmann, Malene Freudendal-Pedersen and Ida Sofie Gøtzsche Lange (Eds), *Handbook of Urban Mobilities*, Routledge, 2020, pp. 109-117.
- Murray, Lesley, Susan Robertson, "Drawing mobile shared spaces: Brighton bench study " in Spinney, Justin, Suzanne Reimer, Philip Pinch (Eds), *Mobilising Design*, Routledge: London, 2017, pp. 211-224.
- NASA Earth Observatory, *Istanbul, 1975*, Image, n.d. <https://earthobservatory.nasa.gov/images/77042/istanbul-turkey>. Accessed on 02.02.2022
- NASA Earth Observatory, *Istanbul, 2011*, Image, n.d. <https://earthobservatory.nasa.gov/images/77042/istanbul-turkey>. Accessed on 02.02.2022
- Nast, Heidi J., Steve Pile, "Making Places Bodies" in Nast, Heidi J., Steve Pile (Eds), *Places through the Body*, Routledge, London, 1998, pp. 1-14.
- National Theatre, *An Actor's Warm-Up, Part Two*, 2014, <https://www.youtube.com/watch?v=zpmbFqEoCWc>, Accessed on 02.04.2022.
- Nelson, Dustin, "What's The Difference Between Streets, Lanes, Avenues, And Other Roads?", *Thrillist*, Website Article. 2016. <https://www.thrillist.com/news/nation/whats-the-difference-between-roads-street-avenues>. Accessed on 11.02.2022
- New Zealand Transport Agency, *State Highway Frequently Asked Questions*, Website Article. <https://www.nzta.govt.nz/roads-and-rail/research-and-data/state-highway-frequently-asked-questions/#state-highways>. Accessed on 13.02.2022

- O'Hare, Daniel, "Urban Walkability in the Subtropical City: Some Intemperate Considerations from SEQ", online article, *Research Gate*, 2006. https://www.researchgate.net/profile/Daniel-Ohare-2/publication/27482758_Urban_Walkability_in_the_Subtropical_City_Some_Intemperate_Considerations_from_SEQ/links/540aeec0cf2f2b29a2cdb73/Urban-Walkability-in-the-Subtropical-City-Some-Intemperate-Considerations-from-SEQ.pdf. Accessed on 16.04.2022.
- Okul, Osman, "Between The City and the Neighbourhood Culture Fikirtepe", in *Journal of Urban Culture and Management*, Vol. 12, No.: 1, 2019, pp. 82-103.
- Pallasmaa, Juhani, "An Architecture of the Seven Senses", in Steven Holl, Juhani Pallasmaa, Alberto Perez-Gomez (Eds), *Questions of Perception: Phenomenology of Architecture*, William Stout, San Francisco, 2006, pp. 28–37.
- Panagopoulos, Thomas, Jose Antonio Gonzalez Duque and Maria Bostenaru Dan, "Urban planning with respect to environmental quality and human well-being", *Environmental Pollution*, Elsevier, 2016, pp. 137-144.
- Paterson, Mark, "More-than visual approaches to architecture. Vision, touch, technique", in *Social & Cultural Geography*, Vol.12, No.03, 2011, pp 263-281.
- Pedestrian Bridges Make Cities Less Walkable. Why Do Cities Keep Building Them?*, Online Article, Institute for Transportation and Development Policy, April 19, 2021. <https://www.itdp.org/2019/10/01/pedestrian-bridges-make-cities-less-walkable-why-do-cities-keep-building-them/>. Accessed on 15.04.2022.
- Pinard, Michael, Jon Hongve, *Pavement Design of Low Volume Roads Using the DCP-DN Method*, Report, London: ReCAP for UK aid, March 2021.
- Pinder, David, "Modernist Urbanism And Its Monsters", in Thomas Micah (ed.), *Surrealism And Architecture*, Routledge: Taylor & Francis Group, 2005, pp. 179-190.
- Pink, S. (2007). Walking with video. *Visual Studies*, 22(3), pp.240-252.
- Pink, Sarah, "Drawing With Our Feet (And Trampling The Maps): Walking With Video As A Graphic Anthropology", in Tim Ingold (ed.), *Redrawing Anthropology: Materials, Movements, Lines*, Ashgate, Surrey, Burlington, 2011, pp. 143-156.
- Pink, Sarah, "Walking With Video", *Visual Studies*, Vol. 22, No. 3, 2007, pp. 240-252.
- Pop, Dana, "Three Approaches in Defining the Space-Place Relationship", in *Acta Technica Napocensis: Civil Engineering & Architecture*, Vol. 57, No. 3, 2014.
- Pouliot, Hugh, "Machines For Living: Reflections On Le Corbusier's Plan Obus (Algiers) & Unité D'habitation (Marseilles)", *Shift: Graduate Journal Of Visual And Material Culture*, No. 4, 2011.
- Prytherch, David L., and Dominique T. Daly, "Rights and Duties of Circulation on American Streets: To 'Proceed Uninterruptedly' or 'with Reasonable Care?'," *Mobilities*, Vol. 10, No. 2, 2014, pp. 211–229.

- Prytherch, David, "Rules Of The Road: Choreographing Mobility In Everyday Intersection", in Julie Cidell and David Prytherch (ed.), *Transport, Mobility, And The Production Of Urban Space*, 1st ed., Routledge: Taylor and Francis, New York and London, 2015, pp. 45-63.
- Rapoport, Amos, *History And Precedent In Environmental Design*, Plenum Press, New York, N.Y., 1990.
- Richards, Simon, "The Antisocial Urbanism of Le Corbusier", *Common Knowledge*, Vol. 13, No. 1, 2007, pp. 50-66.
- Robertson, Sue and Lesley Murray, "Drawing Mobile Shared Spaces: Brighton Bench Study", in Justin Spinney, Suzanne Reimer and Philip Pinch (ed.), *Mobilising Design*, Routledge: Taylor and Francis, London and New York, 2017, pp. 217 - 237.
- Robertson, Sue, "Drawing The Urban Highway: Mobile Representations In Design And Architecture", in Lesley Murray and Sara Upstone (ed.), *Researching And Representing Mobilities*, 1st ed., Palgrave Macmillan, London, 2014, pp. 129 - 149.
- Robertson, Susan, "Visions Of Urban Mobility: The Westway, London, England", *Cultural Geographies*, Vol. 14, 2007, pp. 74-91.
- Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack, *The Geography Of Transport Systems*, 3rd ed., Routledge, Oxon, 2013.
- Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack, *The Geography Of Transport Systems*, 3rd ed., Routledge, Oxon, 2013.p.207.
- Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack, *The Geography Of Transport Systems*, Routledge, London, 2006. p.158.
- Rooney, David, "Keeping pedestrians in their place: Technologies of segregation on the streets of East London", in Phillip Gordon Mackintosh, Richard Dennis and Deryck W. Holdsworth (Eds), *Architectures of Hurry: Mobilities, Cities and Modernity*, Routledge, Oxon, 2018, pp. 120-136.
- Rossi, Aldo, *The Architecture Of The City*, 1st ed., MIT Press, New York, 1982.
- Şanlı, Tuğçe, "Kentsel Ulaşım, Ulaşım Planlaması 2". Presentation. [https://avys.omu.edu.tr/public > KENT_103_1-2](https://avys.omu.edu.tr/public/KENT_103_1-2). Accessed on 10.02.2022
- Schivelbusch, Wolfgang, *The Railway Journey*, 3rd ed., University of California Press, Berkeley, 2014.
- Seigworth, Gregory J., Melissa Gregg, "An Inventory of Shimmers", in Melissa Gregg, Gregory J. Seigworth (Eds), *The Affect Theory Reader*, Duke University Press, London, 2010, pp 1-25.
- Sennett, Richard, *Ten Ve Taş*, Tuncay Birkan (Translated), 5th ed., Metis, İstanbul, 2018.
- Sheller, Mimi, "Automotive Emotions", *Theory, Culture & Society*, Vol. 21, No. 4-5, 2004, pp. 221-242.
- Sheller, Mimi, "Mobilising Transportation, Transporting Mobilities", in Julie Cidell and David Prytherch (ed.), *Transport, Mobility, And The Production Of Urban Space*, 1st ed., Routledge: Taylor and Francis, New York and London, 2015, pp. 45-63.

- Sheller, Mimi, "Natural disasters, mobility and inequalities", Video, in *Mobile Lives Forum*, <https://www.youtube.com/watch?v=rXr1ZHqbfa4&list=PLwpNEfv4VR8mhatQ89tgqWa6HHQhQZ6DF&index=24>, Accessed on 30.05.2022.
- Sheller, Mimi, and John Urry, "Mobilizing The New Mobilities Paradigm", *Applied Mobilities*, Vol. 1, No. 1, 2016, pp. 10-25.
- Sheller, Mimi, and John Urry, "The City And The Car", in *International Journal Of Urban And Regional Research*, Vol. 24, No. 4, 2000, pp. 737-757.
- Sheller, Mimi, and John Urry, "The New Mobilities Paradigm", *Environment And Planning A: Economy And Space*, Vol. 38, No. 2, 2006, pp. 207-226.
- Söderström, Ola, "Mobility", in Mark Jayne and Kevin Ward (ed.), *Urban Theory: New Critical Perspectives*, 1st ed., Routledge, London, 2014.
- SonDakika, *İstanbul Trafiğini Çözecek Proje Havadan Görüntülendi*, News Article, 10.04.2019, <https://www.sondakika.com/haber/haber-istanbul-trafigini-cozecek-proje-havadan-11934807/>, Accessed on 05.04.2022.
- Sorkin, Michael, "Traffic in Democracy", in Joan Copjec and Michael Sorkin (Eds.), *Giving Ground. The Politics of Propinquity*, London: Verso, 1999, pp. 1-18.
- Spinney, Justin, "Transitions: Methodology And The Marginalisation Of Experience In Transport Practice", in Ole B. Jensen, Claus Lassen, Vincent Kaufmann, Malene Freudendal-Pedersen and Ida Sofie Gøtzsche Lange (ed.), *Handbook of Urban Mobilities*, 1st ed., Routledge: Taylor and Francis, 2020, pp. 265-277.
- Stoner, Tim, "İstanbul Spatial Accessibility", Map, in *Smart Cities Workshop*, Presentation, Istanbul, 2014. <https://www.slideshare.net/tstonor/tim-stonor-istanbul-smart-cities>. Accessed on 11.02.2022
- Strohmayer, Ulf, "bridges: Different conditions of Mobile possibilities", in Tim Cresswell, Peter Merriman (Eds), *Geographies of Mobilities: Practices, Spaces, Subjects*, Ashgate, 2011, pp 119-135.
- The Cape Coral Police Department, *How to Properly Use a Merge Lane to Get into Traffic*, Website Article, 03.09.2018. <https://www.capecops.com/newsroom/2018/9/3/how-to-merge-on-the-roadway>. Accessed on 16.02.2022.
- The Construction Index, *Fatal crash prompts fast-tracking of \$30m Australian motorway scheme*, News Article, 12.06.2019. <https://www.theconstructionindex.co.uk/news/view/fatal-crash-prompts-fast-tracking-of-30m-australian-motorway-scheme>. Accessed on 16.02.2022.
- The Constructor, *Types of Grade Separation*, Website Article. <https://theconstructor.org/transportation/grade-separation-interchanges/29200/>. Accessed on 16.02.2022.
- The Directorate of Highways, *Road Network*, <https://www.kgm.gov.tr/Sayfalar/KGM/SubeEng/Root/Gdh/GdhRoadNetwork.aspx>. Accessed on 10.02.2022
- The Economic Times, *Definition Of 'Road Transport'*, Newspaper Article. <https://economictimes.indiatimes.com/definition/road-transport>. Accessed on 10.02.2022

- The General Directorate of Highways, Türkiye’de Araçların Uyması Gereken Yasal Hız Sınırları, <https://www.kgm.gov.tr/Sayfalar/KGM/SiteTr/Trafik/HizSinirlari.aspx>. Accessed on 16.02.2022.
- The Path: A participatory public art project*, Online Article, Oyoun Kultur NeuDenken, 2021, <https://oyoun.de/en/event/the-path/>, Accessed on 14.05.2022.
- Trancik, Roger, “What is Lost Space”, 1986, in Matthew Carmona and Steve Tiesdell (Eds), *Urban Design Reader*, Elsevier: Architectural Press, pp..63-69.
- TremGlobal, ”Highways In Istanbul”, Website Article, 2021. <https://www.tremglobal.com/articles/highways-in-istanbul>.
- Türkiye İstatistik Kurumu, Motorlu Kara Taşıtları- Aralık 2020, 2021. <https://data.tuik.gov.tr/Bulten/Index?p=Motorlu-Kara-Tasitlari-Aralik-2020-37410>.
- UNECE, *Definitions for state roads, provincial roads and communal roads*, 12.06.2015. <https://unece.org/DAM/trans/doc/2015/wp6/ECE-TRANS-WP6-2015-Inf-03e.pdf>. Accessed on 13.02.2022
- Vannini, Phillip, "Mobile Cultures: From The Sociology Of Transportation To The Study Of Mobilities", *Sociology Compass*, Vol. 4, No. 2, 2010, pp. 111-121.
- Venturi, Robert, Denise Scott Brown, and Steven Izenour, *Learning From Las Vegas*, The MIT Press, 1977.
- Virilio, Paul, *Hız ve Politika*, Meltem Cansever (Translated), Metis, 1998.
- White, Edward T., “Path-Portal-Place” in Steve Tiesdell, Matthew Carmona (Eds), *Urban Design Reader*, Routledge; London, 2006, pp 187-196.
- Wilson, Mabel O., "Dancing In The Dark", in Heidi J. Nast and Steve Pile (ed.), *Places Through the Body*, Routledge: Taylor & Francis, 1998, pp. 99-113.
- Winner, Langdon, “Do Artefacts Have Politics?”, *Daedalus*, Vol. 109, No. 1, 1980, pp. 121-136.
- Yalçınan, Murat Cemal, *Kentsel Dönüşümü ve Kentsel Muhalefeti Kent Hakları Üzerinden Düşünmek*, Lecture, Osmanlı Bankası Arşiv ve Araştırma Merkezi, 10.06.2009.
- Yoldaş, Mustafa Alptekin, *Karayollarında Yol Sınıflandırması ve Tıp Enkesitlerinin İncelenmesi: Eminönü-Fatih Örneği*, Thesis, Istanbul Technical University, 2008.

SOURCES OF FIGURES

Figure 1.1: Alkaya, Aytek, *Subjects related to Planning and Engineering*, 2022

Figure 1.2: Alkaya, Aytek, *Subjects related to Mobilities and Social Studies*, 2022

Figure 1.3: Muybridge, Eadweard, “The Horse in Motion”, 1878, Image, in Robinson, Lisa (author), *History of Photography: Muybridge and Marey*, 2017. <https://photofocus.com/inspiration/history-of-photography-muybridge-and-marey/>, Accessed on 10.12.2021

Figure 1.4: Marey, Etienne-Jules, “The Running Lion Tamer”, 1886, Image in Fernandez, Conchita (author), *Etienne-Jules Marey*, 2020. <http://www.betterphotography.in/perspectives/great-masters/etienne-jules-marey/48592/>, Accessed on 11.12.2021.

Figure 1.5: Alkaya, Aytek, *The Routes of Uzunçayır Walks*, 2022.

Figure 1.6: Alkaya, Aytek, *Walk 1 in Uzunçayır*, Video, <https://youtu.be/Hc-TR50Nu7I>, Accessed on 06.05.2021.

Figure 1.7: Alkaya, Aytek, *Walk 2 in Uzunçayır*, Video, <https://youtu.be/v2BhrqyoOLI>, Accessed on 06.05.2021.

Figure 1.8: Alkaya, Aytek, *Walk 3 in Uzunçayır*, Video, <https://youtu.be/oGAJILF28og>, Accessed on 06.05.2021.

Figure 1.9: Alkaya, Aytek, *Walk 4.1 in Uzunçayır*, https://youtu.be/VVr_Y28K4xw, Accessed on 06.05.2021.

Figure 1.10: Alkaya, Aytek, *Walk 4.2 in Uzunçayır*, https://youtu.be/VVr_Y28K4xw, Accessed on 06.05.2021.

Figure 1.11: Alkaya, Aytek, *Walk 5 in Uzunçayır*, <https://youtu.be/Yb9WvylS5n8>, accessed on 06.05.2021.

Figure 1.12: Alkaya, Aytek, *Walk 6 in Uzunçayır*, <https://youtu.be/GIfU7le01cQ>, Accessed on 06.05.2021.

Figure 1.13: Alkaya, Aytek, *Walk 7 in Uzunçayır*, <https://youtu.be/bExO4Jfw95A>, Accessed on 06.05.2021.

Figure 1.14: Alkaya, Aytek, *Walk 8 in Uzunçayır*, <https://youtu.be/12h2izf7SK4>, Accessed on 06.05.2021.

Figure 2.1: Alkaya, Aytek, *Layer of Urbanisation in Istanbul between 1946-2022*, Map, adapted from, Google Maps, *İstanbul*, Digital Map, 2022. <https://www.google.com/maps/@41.1510117,29.0847546,102360m/data=!3m1!1e3>

Figure 3.1: Alkaya, Aytek, *Components of Thoroughfare*, Collage, adapted from, Highways England, Transport Scotland, Llywodraeth Cymru Welsh Government and Department for Infrastructure of An Roinn Bonneagair, 'Road Layout Design' in *Design Manuel for Roads and Bridges*, Report, www.standardsforhighways.co.uk. Accessed on 13.02.2022

Figure 3.2.A: Google Maps, *Tarlabaşı Blv.*, Digital Map, 2014, https://www.google.com/maps/@41.0358315,28.9774172,3a,90y,266.74h,96.61t/data=!3m6!1e1!3m4!1sSHWbwBzPu_zy2I58kRTJNg!2e0!7i13312!8i6656, Accessed on 27.05.2022.

Figure 3.2.B: Google Maps, *Moda Cd.*, Digital Map, 2022, <https://www.google.com/maps/@40.9859177,29.0252352,3a,75y,202.93h,91.54t/data=!3m6!1e1!3m4!1s5JniCgNW-GTSBDv1KgWnJg!2e0!7i16384!8i8192>, Accessed on 27.05.2022.

Figure 3.2.C: Google Maps, *İskele Sk.*, Digital Map, 2022, <https://www.google.com/maps/@40.9859177,29.0252352,3a,75y,202.93h,91.54t/data=!3m6!1e1!3m4!1s5JniCgNW-GTSBDv1KgWnJg!2e0!7i16384!8i8192>, Accessed on 27.05.2022.

Figure 3.2.D: Google Maps, *Şifa Sk.*, Digital Map, 2021, <https://www.google.com/maps/@40.9859177,29.0252352,3a,75y,202.93h,91.54t/data=!3m6!1e1!3m4!1s5JniCgNW-GTSBDv1KgWnJg!2e0!7i16384!8i8192>, Accessed on 27.05.2022.

Figure 3.3.A: Google Maps, *Kuzey Marmara Otoyolu*, Digital Map, 2021, <https://www.google.com/maps/@40.9859177,29.0252352,3a,75y,202.93h,91.54t/data=!3m6!1e1!3m4!1s5JniCgNW-GTSBDv1KgWnJg!2e0!7i16384!8i8192>, Accessed on 27.05.2022.

Figure 3.3.B: Google Maps, *O-4*, Digital Map, 2015, <https://www.google.com/maps/@40.9859177,29.0252352,3a,75y,202.93h,91.54t/data=!3m6!1e1!3m4!1s5JniCgNW-GTSBDv1KgWnJg!2e0!7i16384!8i8192>, Accessed on 27.05.2022.

Figure 3.3.C: Google Maps, *Alemdağ Şile Yolu*, Digital Map, 2019, <https://www.google.com/maps/@40.9859177,29.0252352,3a,75y,202.93h,91.54t/data=!3m6!1e1!3m4!1s5JniCgNW-GTSBDv1KgWnJg!2e0!7i16384!8i8192>, Accessed on 27.05.2022.

Figure 3.3.D: Google Maps, *Samandıra Kartal Bağlantısı*, Digital Map, 2014, <https://www.google.com/maps/@40.9859177,29.0252352,3a,75y,202.93h,91.54t/data=!3m6!1e1!3m4!1s5JniCgNW-GTSBDv1KgWnJg!2e0!7i16384!8i8192>, Accessed on 27.05.2022.

Figure 3.4: Alkaya, Aytek, *Street and Highway Networks in Istanbul*, 2022, adapted from Map Box, *Uzunçayır*, Digital Map, <https://studio.mapbox.com/styles/aytya/ckvpa4rq15uf414pi1l64wcjq/edit/#15.75/40.999446/29.058012>

Figure 3.5: Alkaya, Aytek, *Thoroughfare Hierarchy*, Table, 2022.

Figure 3.6: Alkaya, Aytek, *Morphology of Intersecting Thoroughfares*, 2022, adopted from, Istanbul Metropolitan Municipality, “3011. Sokak”, in *İstanbul Şehir Haritası*, Digital Map, <https://sehirharitasi.ibb.gov.tr>, Accessed on 01.06.2022.

Figure 3.7: Alkaya, Aytek, *Highways in Istanbul*, 2022, adapted from, Google Maps, *İstanbul*, Digital Map, 2022. <https://www.google.com/maps/@41.1510117,29.0847546,102360m/data=!3m1!1e3>

Figure 3.8: Alkaya, Aytek, *D100 the Artery*, 2022, adopted from Google Maps, *İstanbul*, Digital Map, 2022, <https://www.google.com/maps/@41.1510117,29.0847546,102360m/data=!3m1!1e3>, Yandex Maps, *Sancaktepe*, Digital Map, <https://yandex.com.tr/harita/107756/sancaktepe/?ll=29.241379%2C40.994367&z=11.01>, Map Box, *Uzunçayır*, Digital Map, <https://studio.mapbox.com/styles/aytya/ckvpa4rq15uf414pi1l64wcjq/edit/#15.75/40.999446/29.058012>, Istanbul Metropolitan Municipality, *İstanbul Şehir Haritası*, Digital Map, <https://sehirharitasi.ibb.gov.tr>, The Directorate of Highways, *Road Network*, <https://www.kgm.gov.tr/Sayfalar/KGM/SiteEng/Root/Gdh/GdhRoadNetwork.aspx>, Istanbul Metropolitan Municipality, *İstanbul Şehir Haritası*, Digital Map, <https://sehirharitasi.ibb.gov.tr>.

Figure 3.9: Alkaya, Aytek, *Diagrammatic Map of D100*, 2022.

Figure 3.10: Alkaya, Aytek, *Intersection of D100, the Highway and D100, the Artery*, 2022.

Figure 3.11: Alkaya, Aytek, *Uzunçayır Grade Separated Junction*, Map, 2022, adapted from, Yandex Maps, *Uzunçayır*, Digital Map, <https://yandex.com.tr/harita/115706/uskudar/?l=sat&ll=29.057380%2C40.999305&z=16>.

Figure 3.12: Alkaya, Aytek, *Arterialisation of Uzunçayır Junction*, 2022, adapted from, Google Maps, *Uzunçayır*, Digital Map, 2022. <https://www.google.com/maps/@40.9991884,29.0582568,976m/data=!3m1!1e3>

Figure 4.1: Alkaya, Aytek, *Movement and Mobility*, Drawing, 2022.

Figure 4.2: Alkaya, Aytek, *Uzunçayır-Rhythm of Mobility*, Video, 2020. <https://www.youtube.com/watch?v=dMzkvuhBP3s&t=2s>. Accessed on 02.05.2022.

Figure 4.3: Alkaya, Aytek, *Intersection of Mobility Conduits*, Video, 2020, <https://www.youtube.com/watch?v=Jb2z8r77vyc&t=44s>, Accessed on 23.05.2022.

Figure 4.4: Alkaya, Aytek, *Public Transportation Modes in Uzunçayır*, 2022, adapted from, Google Maps, *Uzunçayır*, Digital Map, 2022, <https://www.google.com/maps/@40.9991884,29.0582568,976m/data=!3m1!1e3>.

Figure 4.5: Alkaya, Aytek, *Intersection of Pedestrian and Automobile*, 2021.

Figure 4.6: Alkaya, Aytek, *A Gift from IMM*, Image, adapted from, Istanbul Metropolitan Municipality, *Fikirtepe Kavşağı İstanbul'a Bayram Hediyesi Oldu*, News Article, 20.08.2021. <https://ibb.istanbul/arsiv/38022/fikirtepe-kavsagi-istanbula-bayram-hediyesi-o>, Accessed on 04.05.2022.

Figure 4.7: Alkaya, Aytek, *Pedestrianisation of Uzunçayır Junction*, 2022.

Figure 4.8: Akkel, Umut Azad, *The Path*, Image, <https://www.instagram.com/p/CT2U8pUAffW/>, Accessed on 14.05.2022.

Figure 4.9: Alkaya, Aytek, *Overpass between the Metro Entrance and the University*, 2020.

Figure 4.10: ATV, *Yayaların Tehlikeli Kestirmesi*, Image, 05.01.2022, <https://www.atv.com.tr/gun-ortasi-bulteni/yayalarin-tehlikeli-kestirmesi/ozelvideo/izle>, Accessed on 05.04.2022.

Figure 5.1: Alkaya, Aytek, “Uzunçayır Walk 3, 1B”, in *Walk 3 in Uzunçayır*, Video, <https://youtu.be/oGAJILF28og>, Accessed on 06.05.2022.

Figure 5.2: Alkaya, Aytek, “Uzunçayır Walk 7, 4B”, in *Walk 7 in Uzunçayır*, <https://youtu.be/bExO4Jfw95A>, Accessed on 06.05.2022.

Figure 5.3: Alkaya, Aytek, “Uzunçayır Walk 3, 2B”, in *Walk 3 in Uzunçayır*, Video, <https://youtu.be/oGAJILF28og>, Accessed on 06.05.2022.

Figure 5.4: White, Edward T., “Path-Portal-Place” in Steve Tiesdell, Matthew Carmona (Eds), *Urban Design Reader*, Routledge; London, 2006, pp 187-196.

Figure 5.5: Alkaya, Aytek, “Uzunçayır Walk 1, 3A”, in *Walk 1 in Uzunçayır*, Video, <https://youtu.be/Hc-TR50Nu7I>, Accessed on 06.05.2022.

Figure 5.6: Alkaya, Aytek, “Uzunçayır Walk 5, 3A”, in *Walk 5 in Uzunçayır*, <https://youtu.be/Yb9WvylS5n8>, accessed on 06.05.2022.

Figure 5.7: Alkaya, Aytek, “Uzunçayır Walk 1, 2A”, in *Walk 1 in Uzunçayır*, Video, <https://youtu.be/Hc-TR50Nu7I>, Accessed on 06.05.2022.

Figure 5.8: Alkaya, Aytek, “Uzunçayır Walk 5, 5B”, in *Walk 5 in Uzunçayır*, <https://youtu.be/Yb9WvylS5n8>, accessed on 06.05.2022.

Figure 5.9: Alkaya, Aytek, “Uzunçayır Walk 6, 1B”, in *Walk 6 in Uzunçayır*, <https://youtu.be/GIfU7le01cQ>, Accessed on 06.05.2022.

Figure 5.10: Alkaya, Aytek, “Uzunçayır Walk 4.2, 4A”, in *Walk 4.2 in Uzunçayır*, https://youtu.be/VVr_Y28K4xw, Accessed on 06.05.2022.