DESIGN PROMLEMATIQUE OF PAIRED BORDER CITIES

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

RÜYA ERKAN

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
URBAN DESIGN
IN
CITY AND REGIONAL PLANNING

AUGUST 2018

Approval of the thesis:

DESIGN PROBLEMATIQUE OF PAIRED BORDER CITIES

submitted by **RÜYA ERKAN** in partial fulfillment of the requirements for the degree of **Master of Science in Urban Design in City and Regional Planning Department, Middle East Technical University** by,

Prof. Dr. Halil Kalıpçılar
Dean, Graduate School of **Natural and Applied Sciences** _____

Prof. Dr. H. Çağatay Keskinok
Head of Department, **City and Regional Planning** _____

Assoc. Prof. Dr. Olgu Çalışkan
Supervisor, **City and Regional Planning Dept., METU** _____

Examining Committee Members:

Prof. Dr. H. Çağatay Keskinok
City and Regional Planning Dept., METU _____

Assoc. Prof. Dr. Olgu Çalışkan
City and Regional Planning Dept., METU _____

Assoc. Prof. Dr. Hacer Ela Aral
Architecture Dept., METU _____

Assist. Prof. Dr. A. Burak Büyükcivelek
City and Regional Planning Dept., METU _____

Assist. Prof. Dr. Cansu Canaran
City and Regional Planning Dept., TED University _____

Date: 13.08.2018

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name : Rüya Erkan

Signature :

ABSTRACT

DESIGN PROMLEMATIQUE OF PAIRED BORDER CITIES

Erkan, Rüya

M.Sc., Urban Design, Department of City and Regional Planning
Supervisor: Assoc. Prof. Dr. Olgu Çalışkan

August 2018, 186 pages

International borders are concrete places that contain many dynamics within, expressed in abstract lines or abstract areas on the map. In the past, the concept of the border, which sustained its daily existence, has undergone both spatial and semantic changes. During these changes, the problems of the interface between the human relations, the border-crossings and the structure under the two different systems between the two sides of the boundary have always been fresh and agenda. Moreover, it has always been a remarkable research topic in many research fields.

In many social sciences, borders that have been examined in different contexts have not found sufficient merit in the field of urbanism. For this reason, this study deals with the design problematique of the paired border cities from the urbanistic perspectives with a comprehensive review. Influence of life on the border with spatial decisions on boundaries, and spatial problems with relations have made this study focus on integration. Following a broad review of the literature and a World Panorama in the border context, this study provides a strategic framework that would enable both the design problematique of the paired border cities and the integration between the two sides of the boundaries.

Keywords: paired border cities, design problematique, boundaries, frontiers

ÖZ

BAKIŞIK SINIR KENTLERİNDE TASARIM SORUNSALI

Erkan, Rüya

Yüksek Lisans, Kentsel Tasarım, Şehir ve Bölge Planlama Bölümü
Tez Yöneticisi: Doç. Dr. Olgu Çalışkan

Ağustos 2018, 186 sayfa

Uluslararası sınırlar, içinde bir çok dinamiği bir arada bulunduran, harita üzerinde soyut çizgiler veya soyut alanlarla ifade edilen somut mekanlardır. Geçmişten günümüze varlığını sürdüren sınır kavramı zamanla hem mekansal hem de anlamsal değişikliklere uğramıştır. Bu değişiklikler süresince, bir sınırın iki yakası arasındaki insan ilişkilerinin, sınır-geçişlerinin ve iki ayrı sistem altındaki yapı arasında oluşan arayüzün sorunları, içeriği değişse de hep taze ve gündemde kalmıştır. Ve bir çok bilimdalı içinde her zaman dikkat çekici bir araştırma konusu olmuştur.

Birçok sosyal bilim alanında, farklı bağlamlarda incelenen sınırlar şehircilik alanında yeterli önemi görememiştir. Bu sebeple bu çalışma bakışık sınır kentlerindeki tasarım sorunsalını kapsamlı bir inceleme ile şehircilik bakış açısından ele almaktadır. Sınırlar üzerine verilen kararlarla sınırdaki hayatların etkilenmesi ve ilişkisel açıdan mekansal sorunlara yol açması, bu çalışmanın bütünleşme konusuna odaklanmasını sağlamıştır. Geniş bir literatür taraması ve sınır koşulu bağlamında Dünya'ya genel bir bakışın ardından, bu çalışma hem bakışık sınır kentlerindeki tasarım sounsalına odaklanıp hem de sınırların iki yakası arasındaki bütünleşmeyi sağlayacak stratejik bir çerçeve sunmaktadır.

Anahtar Kelimeler: bakışık sınır kentleri, tasarım sorunsalı, sınırlar, uçlar

To *Borderless* World

ACKNOWLEDGMENTS

This thesis would not have been possible without the guidance, support and help of many individuals, who contributed their valuable assistance. First and foremost, I would like to express my deepest gratitude to my supervisor Assoc. Prof. Dr. Olgu Çalışkan for his unlimited patient, guidance, advice, criticism, encouragements and insight throughout the research. He really has never lost his enthusiasm and interest for this research period. Whenever I needed him, even if he was in abroad, he always helped me. I appreciate all his contributions of time and ideas. I also would like to thank to examining committee members; Prof. Dr. Çağatay Keskinok, Assoc. Prof. Dr. Hacer Ela Aral, Assist. Prof. Dr. A. Burak Büyükcivelek and Assist. Prof. Dr. Cansu Canaran for their suggestions, contributions and the time they patiently devoted.

Besides, I owe sincere and earnest thankfulness to Prof. Dr. M. Adnan Barlas for he has always been an inspiring person during my education and my private life. He has not only taught me and my classmates a profession, but also how to be a decent, lovely and fair person. I also own my deepest gratitude to Prof. Dr. H. Neşe Özgen since she enlightened me about the borders and provided me knowledge on the border issue with her unlimited supports and guidance. Without her, this thesis would never have been written.

I would like to express my heartfelt gratitude to the members of the METU Urban Design Studio. I am also thankful for the contribution of many members of the University. I would like to offer my special thanks to my lifelong friends, Dilan Eyyüpoğlu, Elif Saka, Elif Muratoğlu and Hazel Özge Doğan for they always be there whenever I need a warm voice and motivation.

Especially, I am deeply grateful for the presence of Eser Seçkin Öcek in my life. I would like to thank him for giving me whole hearted love, encouragement, supports, friendship and endless tolerance. He is the one that always believes in every step I take more than I do, and he has been a great source of happiness and joy to me every time, even challenging times.

Last but not the least, there were four precious people without whom I would not have contemplated this road, and I owe everything to them, my parents; Suzan and Şakir who have always supported me in every time, even when I lost my belief; and my sister Sıla, who is a most active and energetic people in my life without her I have always been in depression, and Emre, who always make me happy with my sister. I also would like to thank to ‘Apartman Sahne’ which have made me busy and happy during this processes.

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CHAPTER 1

INTRODUCTION

"Who belongs where? Who is an insider? Who is an outsider? Who is part of us and who is part of them?"

(Popescu, 2011, p. 8)

1.1. Problem Definition

Borders have been changed through the meaning and the spatial connotations since the antiquity. Initially, the border is represented as areal, then this areal meaning has narrowed and became an abstract line on a map. However, the relations between two sides of the border, the problems and the conflicts arising from that issue have always continued. The physical elements along the boundaries have an essential role in that problematique. After the fall of the Berlin Wall, it is thought that the nationalism era with inconveniences it caused to citizens has started to demolish. However, contrary to consider, the new walls and fortification components began to reappear again along the boundaries and between people of the same geography.

The border studies with its problematic issues have always been an attractive study area for geographers, anthropologists, sociologists, historians and political scientists. Geographers have always been the most prolific when it comes to the border studies. They identified various types of border processes. Moreover, different notions (boundary, border, frontier, borderland, border region, barrier, and limit) are generally determined by geographers. Political geography has always been an important field of study for them.

The historicity of the borders has also created an attractive research area for historians. The changing meaning of the concept itself in the course of time has always been one of their study fields. Historians also evaluated the concepts such as closed or open

boundaries in the historical process. The best example of that issue is the Martinez's typology of borders which is also determined in Chapter 3 (1994). *Alienated, Coexistent, Interdependent* and *Integrated Borderlands*, are the categorization of relational approaches of borderlands which are derived from the historical studies on border condition.

Anthropologists are also very interested in the concept of border but not in a physical sense. This field of study have always been a gold mine for them as several controversies (insider-outsider, us-them, or in-group-out-group) needed to be investigated are implicit in it. They also interested in social boundaries between the neighboring countries. Wallman (1978) claims that social boundary has two sides and two kinds of meaning and she creates a four-part matrix (Table 1) (p. 207).

Table 1. The matrix of the social boundary (Source: Wallman, 1978: 207)

	Identity	**Interface**
INSIDE (us)	*We identify 'us' in opposition to 'them'. We use the boundary for our purposes, according to our need(s) at this time/in this context.*	*The border around the familiar, the normal, the unproblematic*.
OUTSIDE (them)	*They identify themselves by contrast to the rest of 'us'. They use the boundary for their purposes.*	*The beginning of another system. Performance, appearance, activity, social or symbolic structure is different.*

As it is seen in Table 1, how different social groups created by boundaries would come together and what kinds of relations could emerge from that issue is one of the study areas on border condition for anthropologists. By understanding the social pattern of the border, they have examined the effects of borders on the citizens. They have studied how this relationship is based on both the border and the states and politics. The interface is the main research topic for almost all sciences. Interface creates its own reality and it worths studying to reveal the main problems and opportunities.

Political scientists and international relations scholars have primarily focused on the state territory-society nexus and state-to-state relations while anthropologists have determined an interrelationship between symbolic boundaries and the function of state

borders on border people and their relations (Cassarino, 2006: 6). The political scientists have determined the borders as institutions and processes.

Borders in architecture is another attractive point for the researches on border issue. According to Schoonderbeek (2015) spatial thinking on sciences and also on the border studies has benefited from such notions as warped space, friction space, smooth space, oligoptic space, global space, border space, territorial integrity, liminal space or in-between space (p. 96). These kinds of notions has been studied on borders in architectural discourse. However, urbanism on borders still remains weak. This study try to fill this gap on the literature.

Although there are many published border studies produced within these research areas, few studies have been conducted on the spatiality of borders. Border people and border cities, together creating what an urbanist might call “reality of the borders” , are remarkable elements that there are limited number of border studies done in the field of urban. There is a research study about ‘Journal of Borderland Studies’ in 2009 (Brunet-Jailly, 2010). According to this research, published papers in Journal of Border Studies are primarily from economics with the percentage of 21.9. The percentage of political science is 17.1, sociology is 12.4, geography is 10.9 anthropology is 3.7, and history is 3.7. On the other hand, the percentage of the study of urban planning and regional development is only 2.2 and planning/landscape architecture is only 1.1 (Brunet-Jailly, 2010: 14). This study also reveals that there is a considerable gap in the field of urbanism and spatiality on border condition. On the contrary of the lack of the academic studies on border condition in the field of urbanism, there are lots of projects which are placed on boundaries, border cities, and frontiers regardless the political or social studies on border conditions.

That is why this study is trying to fill the gap in the field of urban studies on border condition. This broad study mainly focuses on the interface between the paired border cities, two neighboring countries and two sides of the borders. On the one hand, this study forms a base for the integration of life and the spatiality on both sides of the borders, on the other hand, it integrates the spatial dimension of borders with its socio-political dimension.

1.2. Aim of the Study and Research Questions

The main aim of the study is to analyze the international boundaries and the border cities within a comprehensive approach to understand the design problematique of the paired border cities and to come up with a strategical framework for the urbanistic interventions on the contexts of the boundary, border, and frontier. Possible problems of contemporary border cities and possible solutions to those problems are determined to compose contemporary and comprehensive approaches. The main issue which is needed to be analyzed carefully and underlined is that all the boundaries and the border cities are unique, all of them have different characteristics, historical backgrounds, particular problems, and needs. Because of that issue, the strategical framework has to be comprehensive and cover general solutions, but the specific interventions on the border cities have to be unique for those. Within this general framework of the aim of the study, the research focuses on this issue – **'is it possible to suggest a guiding strategic framework for responsive urbanism on the paired border cities?'**

To be able to establish a general strategical framework for boundary conditions, each having different characteristics, the study is corroborated by answering four specific research questions. The first question – **'what is the conceptual nature of the border condition?**' – is investigated to determine the spatial connotations of three notions (*boundary*, *border* and *frontier*) which are introduced in complexity in literature. The second research question – **'what are the major types of boundaries and paired border cities in real?**' – is examined to facilitate the analyzing the border conditions in a general framework, revealing the common features of the international boundaries and the border cities with different historical backgrounds, various precision points, and unique spatial problems. The third research question – **'how do international boundaries characterize the paired border cities?**' ¬ is investigated to reveal the main problematic areas of the border cities with comprehensive typology by mapping the paired border cities, which gives a reference for the contemporary projects on the border conditions. The last research question – **'how is the current comprehension of urban design practice on the issue of border condition?**' – is examined to analyze the main approaches to the border conditions regarding the contexts of the

boundary, border, and frontier. Therefore, this study tries to consider every condition in broad and comprehensive perspectives.

1.3. Methodology of the Research

This explorative research would be conducted by revealing the literature review of border studies in social and political sciences to form the spatiality of the border condition. This broad literature review contains etymological and historical definitions of the notion of the border with spatial connotations. In order to create a spatial theoretical framework on which the general discourse of the research, contemporary typological approaches on international boundaries and the paired border cities are investigated. Following this typological point of view, a contemporary World Panorama is mapped. Both the boundaries and paired border cities around the World are constructed on a World map to understand the World's border dynamics with similar and different problems on that issue. While creating this map, all the international boundaries are searched on the Google Earth, Google Maps and Yandex Maps with their satellite images and street views. Moreover, all these data of the boundaries and paired border cities have been processed to excel table and ArcGIS program. After creating World Panorama, a comprehensive typology of paired border cities are exemplified in order to get detailed knowledge about the spatial design problematiques on border cities. While creating a typology of paired border cities, fourteen cities exemplifying this kind of spatial relationship with its neighbors are mapped regarding urban network systems, land-use patterns, and cross-border relations. While selecting these fourteen examples, four criteria are determined. Firstly, these selected examples has to be same populations range. Secondly these examples are from different continents of the World. After these two criteria it is noted that they have different relational and spatial characteristics to reveal the different design problematiques. Finally within these three criteria, the 14 cities which have more data of urban network, land-use pattern and border relations are selected.

After framing the theoretical background and drawing contextual framework by an extensive literature review and mapping the border cities from all over the World, to provide an enhanced understanding about the main problems and the comprehensive

projects developed to solve these problems, forty-five selected projects would be examined to identify the solutions on border conditions within the contexts of boundary, border and frontier. While investigating the selected projects, their main urbanistic strategies and the design tactics are demonstrated to create a base for the strategic framework for urbanism on border condition.

Revealing this explorative research in addition to a broad literature review, also mapping and demonstrating the World Panorama with possible solutions on the problems of border conditions lead to understanding the main problem which is the problem of integration between the spatiality of the border and socio-politic dimensions besides the spatial integration between two sides of the boundary. In order to ensure that problems, a strategic framework is proposed for urbanism on border condition.

1.4. Structure of the Study

This study is constructed in six parts (see: Figure 1). The current chapter, **Chapter 1** is giving general information about the whole research with the problem definition, research questions, and the methodology. In **Chapter 2**, the notion of the border is determined in detail based upon the literature review done. The etymology of the concept 'border', the essential differences between the notions of 'boundary', 'border' and 'frontier' with their spatial connotations are also investigated in this part of the study. Moreover, the changes in the notion of the border in the historical processes are examined in the context of its spatial characteristics. Following this part, **Chapter 3** investigates the typological approaches of the international boundaries and paired border cities. After these comprehensive theoretical chapters on border conditions, in **Chapter 4**, boundaries and paired border cities are mapped in the international context to create a wide range World Panorama and to reveal a comprehensive typology of the paired border cities with their border-crossing problems and opportunities stemming from being border cities. For the existing fourteen types of paired border cities, the selected examples (from Germany-Poland, Brazil-Uruguay, Peru-Ecuador, Germany-The Netherlands, Bhutan-India, the U.S.-Canada, the U.S.-Mexico, China-Vietnam, Spain-U.K., Spain-Morocco, Kenya-Somali, North and South Cyprus, and Israel-

Palestine border) are investigated to work through on border condition with their problems, advantages, opportunities and obstacles especially on the issue of border-crossing. In **Chapter 5**, forty-five different contemporary projects are examined on the border condition in terms of three formerly defined notions (boundary, border, and frontier). These projects are reviewed regarding their re-interpretation of the cross-border relations to understand their main emphasizes on the border condition by suggesting particular design strategies and interventions. **Chapter 6** offers a strategic framework for urbanism on border conditions regarding the existing problems with aims and objectives on that strategies. It also presents concluding remarks and critical evaluations of the research by briefly investigating the socio-political and spatial contexts of the border condition.

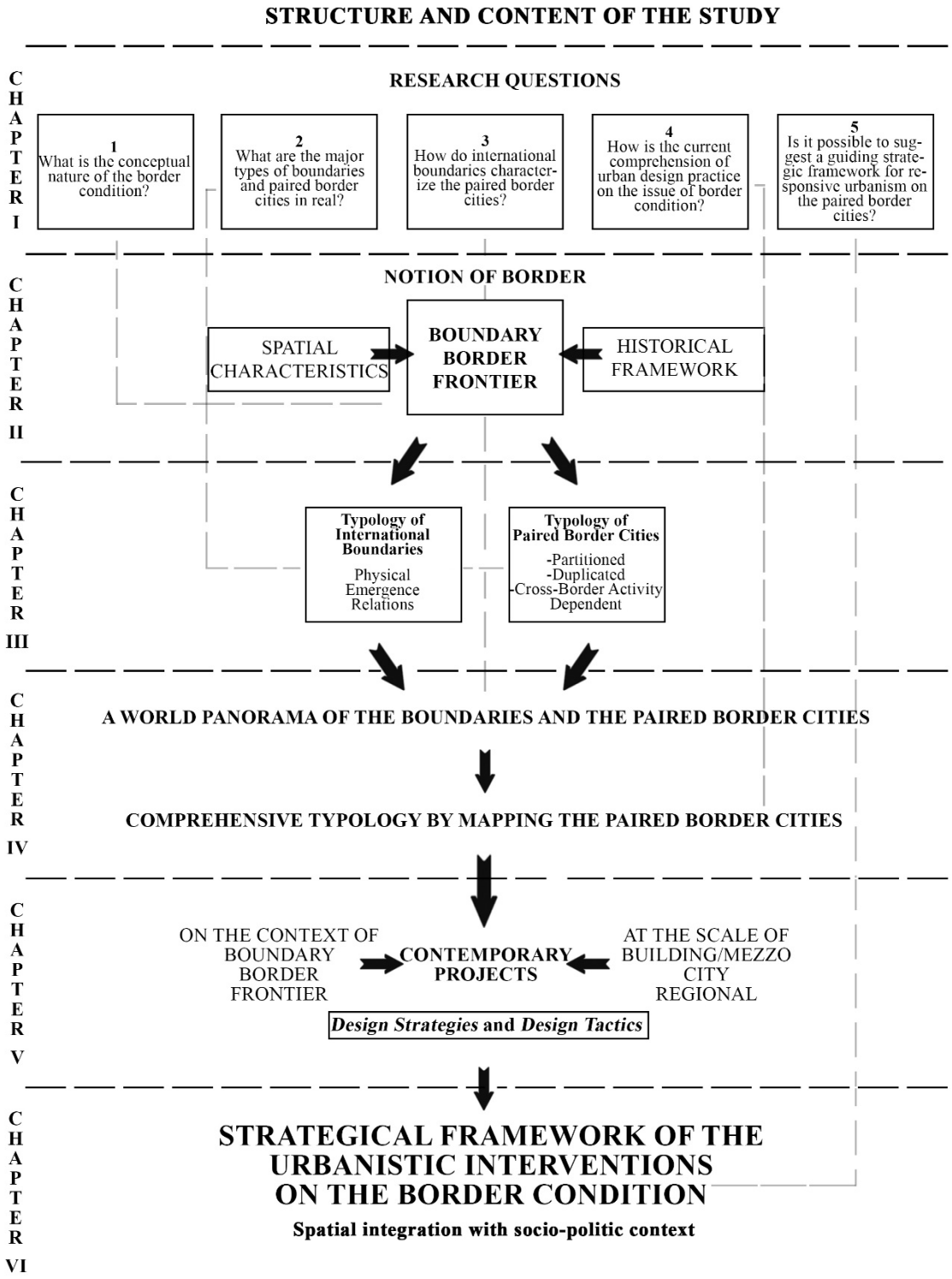


Figure 1. Structure and the content of the study

CHAPTER 2

NOTION OF BORDER

"If the border is pre-conditioned to enter the other side, then the wall is created to overpass."[1]

(Yerasimos, 1997-1998)

This chapter focuses on the border notion in general terms. Its basic definitions, why people have used these words, why they have needed them, how and why the meaning of the words have been changed, and historical background of states' border is studied to understand what exactly the 'border' is.

The notion of the border has been going on since the existence of human being, and it would continue. However, the notion of the border has transformed, differentiated and reorganized during different periods and contexts. There are explanations and different meanings attained to borders that have spread to the broad geographical area, from the borders of property belonging to an individual, to the territoriality of the nation-states, and even to the borders of international organizations such as European Union (EU). Therefore, to study on border areas, in this chapter, border, boundary, frontier, border regions and border settlements is tended to be understood.

2.1. Basic Definitions

Throughout the history, like all other concepts, the meaning of border has also changed through different periods because of several reasons. However, understanding the real meaning of the terms and their etymology will help to study the concept. Therefore,

[1] This statement translated from Yerasimos Turkish article which is '*Border, Frontier and Wall'*. The original text is as in the follow: "Sınır öteye geçmenin ön koşulu ise duvar da aşılmak için yaratılmıştır." (Yerasimos, 1997-1998 p. 1)

firstly, we will focus on the etymology of words through different languages and different cultures on this part. Secondly, in the English language, differences between the basic three concepts implying border are discussed to clarify the different connotations of them. These are the border, boundary, and the frontier.

2.1.1. Etymology of "Border/Boundary/Frıontier"

According to Lunden (2004), to define a notion, it is needed to determine the meaning of a word and another linguistic expression. The term of the boundary is used differently in different languages. Lunden (2004) explained different meanings of the terms at one time and examined different concepts using for a boundary.

In Europe, most of the words of languages of Latin origin for boundary derive from Latin *"de-finire"*. This implies boundary as a line. It is the line that can be reached, passing through the last point and separating the other side. Another Latin word relating to the notion of the border is *limit*. It denotes the point where something ceases to exist or an enclosure of some kind. All these kind of words derived from Latin generally have been used for limitation of something not for separation something from others (Lunden, 2004, pp. 13-17; Özgen, 2015).

The common Germanic words for boundary, *grenze, grens, gräns*, are of Slavic origin, and these words are coming from the border areas between Germanic and Slavic speech in the south-eastern Baltic area. Moreover, In Scandinavian and most other Germanic languages, the word *slut, schluss,* etc. is comparable to the English word of the *end.* As a noun, *slut* etc. is a boundary or specific point where an area, a process or a part of time ceases. Another word is a *mark* which is used for a land area, not cultivated or not settled (Lunden, 2004, pp. 13-17; Prof. Dr. H. Neşe Özgen, personal interview, November 2015).

In other languages, there are several words for a boundary, but some of them are interesting because of their meanings as a boundary. In Poland, *torin, thorn* mean corner, edge or angle as a boundary and also they mean that area allowed by the bog. Agricultural lands are defined by the bog. They are not the lands which are arranged; it is a boundary or border coming from outside. In Finnish, there is a word for historical

limits, *skillnaden,* it determines the points of the history, and it means the last point of the history. In Swedish, Danish/Norwegian words for boundary are *rõr–rõse-ra* and their meanings are about the marking the boundary. However, after real-estate ownership arrangements, their meanings have changed to determine the boundaries of ownership of territories. The word *krai* generally exists in Slavic-speaking countries. It means much more regional, for example, a farm and houses within this farm. Krajina and *krijnost* are other words for boundary or border in southern Slovenia, northwestern Bosnia-Herzegovina, Croatia, and Ukraine. Their meanings are periphery, the area which a house can reach (Lunden, 2004, pp. 13-17; Prof. Dr. H. Neşe Özgen, personal interview, November 2015).

In English *march* is a district to build for defending the boundary. Also, it is used for peripheries and surroundings which are not settled (Lunden, 2014, p. 17). In English, *border*, *boundary,* and *frontier* are three words to define the border notion. However, *border* derives from Old French bordeure which means 'seam, the edge of a shield, border'. The *boundary* is from *'bound +-ary'*, bound derives from Anglo-Latin *bunda,* from Old French bonde which means limit, boundary stone. Furthermore, there is a Romanic word; *frontier* derives from Latin *frons, forehead*. There are some early meanings of the frontier which are the *front line of an army, part of a country which faces another, facing, neighboring* (Etymonline.com, 2017).

In Turkish, the situation is almost the same. There are some words for the boundary or border. However, their meanings have changed. There are also three notions in Turkish imply the concept of the border, *sınır, uç* and *hudut*. It could be said that *'sınır'* is a connotation of the border while *'uç'* is frontier and hudut is a boundary. However, the differences between *'uç'*, *'sınır'* and '*hudut*' are not exactly the same as the differences between the terms of the border, frontier, and boundary. There are historical, stylistic and functional differences between these concepts. Before the 20th century, there are *'uç'* between states. They were ended zones between two states or empires. After the 20th century, the concept has changed, and the lines between the two states started to occur and the concept of *'hudut'* replaced with the concept of the *'uç'*. In today's World, there are not almost any *'uç'*. *'Hudut'* represents a political line between two states, while *'sınır'* represents a transition region which also covers

the *'hudut'*. However, *'uç'* means a zone which does not touch the *'hudut'* (Dönmez, 2010. pp. 53-67). To explain the term of *'uç'*, differences between the concepts and the reasons why the concept has changed Yerasimos (1997-1998, p. 1) states that:

> *"There used to be no border; there was a frontier (uj). There were margraves. […] The frontier (uj) is not a concept for only the tribes, states, empires as a transition from something ours to something, not ours. The land between two residential buildings on earth conforms to the same rules. Every step you take from your home to your neighbor's home, you are on land your right of disposition is gradually decreasing, and your neighbor's right of disposition is increasing. Collective activities take places in the commonplaces of this land. The clothes are hanged up; the children play, the animals pasture and third people come and go. When you came to your own home, you are on your own frontier (uj). […] LIMIT, the expression of the border concept, comes from the Latin 'limes'. However, 'limes' means 'frontier' (uj). […] At the beginning, the 'limit' is perceived as only an end or frontier, a transition from existing to non-existence, from us to another, and over time this concept will crystallize and reach an abstract line."*[2]

According to all these definitions in different languages, there are some common situations. First of all, the notion of the border did not imply a line at first. For some of the languages, the terms have used to imply an area, zone or region. Secondly, it generally means that somewhere or something which cannot be reached, settled or do not belong to someone. Finally, the words in different languages which are used for the notion of border generally means like transition zone, area or process. In addition to all these regional meanings they are not regulated areas by someone, on the

[2] This statement translated from Yerasimos Turkish article which is *'Border, Frontier and Wall'*. The original text is as in the follow: *"Eskiden sınır yoktu, uç vardı. Uçların beyleri vardı.[…] Uç, bizim olandan bizim olmayana doğru bir geçiş olarak, yalnız kavimlere, devletlere, imparatorluklara özgü bir kavram değildir. Toprak üzerine konmuş iki konut arasındaki arazi de aynı kurallara uyar. Evinizden komşunuzun evine doğru attığınız her adımda, kendi tasarruf hakkınızın giderek azaldığı ve komşunuzun tasarruf hakkının giderek arttığı bir toprağa basarsınız. Bu alanın ortak yerinde ortak faaliyetler oluşur. Çamaşırlar asılır, çocuklar oynar, hayvanlar otlar, üçüncü kişiler gelip geçer. Kendi evinize doğru geldiğinizde kendi ucunuzdasınızdır. […] Sınır kavramının ifadesi olan LİMİT, latince limes'dan gelir. Oysa limes uç demektir. […] başlangıçta limit ancak bir uç, vardan yoğa, bizden ötekine bir geçiş olarak algılanmaktadır ve zamanla bu kavram billurlaşıp soyut bir çizgiye ulaşacaktır."* (Yerasimos, 1997-1998, p. 1)

contrary, they come from nature or natural edges. It is an outside boundary. Another inference from these etymological analyses is that these concepts were not used for separating two nations, social groups or ethnicity at first. They did not delimitate two settlements. They used for areas which are limited from nature or outside.

2.1.2. Conceptual Framework: Border, Boundary, and Frontier

Border studies are extensive, and almost all social sciences are interested in it. Geographers, historians, anthropologists, political scientists, social scientists, economists, etc. all have used some different terms for the *border, boundary, borderlands, frontiers*. Nevertheless, the researchers have not been agreed in a standard definition of those terms. There is a lack of conceptual consensus. In general, there are three words in English, and sometimes they are being used interchangeably. However, the real meanings of these words are different from each other. According to Baud and Van Schendel, Anglo-American scholars have a certain tendency to use the word of the *frontier*, while British scholars prefer *border* and *boundary* (1997). Except for these differences, there are conceptual differences between the words.

First, to understand these concepts properly, the ontological analysis is needed. According to Gedal and Jeansoulin's *"the words in the dictionary: a mere terminological point of view"*, the terms of the border, bound and frontier were examined (see: Table 2).

Table 2. Etymological background of terms (Source: Gedal and Jeansoulin, 1998, p. 177)

English Entry	Corresponding (French Entry)	Etymology	First Meaning	Derived Words	Concept
Border	[bordure]	(old French *bort*, = ship's side Germanic origin)	An outer edge of something, like a margin, but belongs to this something	Bordering [Fr: a border, to approach	To terminate
Bound	[borne]	(old French *borne*, MedLatin-gaulois *bodina*)	The external or limiting line of an object	Boundary [something that marks a bound]	To mark
Frontier	[frontière]	(Latin *frons*, forehead)	A part (of a country …) that fronts or faces another (country …)	-	To face (relatively to something else)

According to 0, all three words have different meanings and different origins, but all researchers try to explain the terms differently. Although they have some common points, about the meanings of terms, they also have such opposite views. To summarize these concepts, the terms; boundary, frontier, border, and borderland are examined respectively.

2.1.2.1. Boundary

In the meaning of 'boundary', almost all researchers have a common idea. The term, boundary connotes something linear. It is more appropriate for the line itself, and the boundary is a line, usually in space. In addition to being a line itself, boundaries also demarcate the territorial sovereignty of the states. Moreover, it could be used to distinguish social groups, neighborhoods, cities or natural lands (Anderson, O'Dowd, 1999: 603, Lunden, 2004: 16, Cassarino, 2006: 3, Haselsberger, 2014: 509).

In addition to these explanations, Lunden examined "boundary theory" from another direction which is nature. He (2004, p. 16) said that:

> "*In nature, boundaries are marked by detachment of different physical states (molecular configurations), e.g., at the boundary between water and air at the*

surface of the sea, the wood and the bark in the stem of a tree, or the bark and the air in the forest."

In these explanations, Lunden (2004) tries to explain the natural boundaries as they always change according to time and space (p. 17). However, the boundaries of organized societies are different from these natural boundaries because there are no natural boundaries to separate human beings in space. All boundaries of organized societies are made by someone to clarify *"who belongs where, who is an INSIDER and who is an OUTSIDER, who is part of US and who is part of THEM"* (Popescu, 2011, p. 8). In other words, if human beings use the nature like river, sea, or mountain as a boundary to divide the societies, it is not the fault of nature. They can also use some physical elements to separate themselves from others.

It could be said that after determining who lives where a boundary which is a line shows the edge of this limitations. It shows that every human being has to live in this closed line which is for them because the other part is someone else's.

2.1.2.2. Frontier

The term, 'frontier' mainly means of an area or zone (Kristof, 1959, Anderson, & O'Dowd, 1999, Baud, & Van Schendel, 1997, Lunden, 2004, Cassarino, 2006, Haselsberger, 2014). Etymologically, it refers to '*in front*'. It is derived from that the area which faces to the other side (see: Table 2). Within this area or zone concept, frontier refers to territorial expansion through the empty zones. This empty zone refers to unsettled areas or few settlements. In the North American history, this word is the end of settlement westwards, the front for the new settlers (Baud & Van Schendel, 1997, Lunden, 2004). According to Cassarino (2004, p. 3), frontier covers both sides of the boundary, and it is an interaction area of either side. The term frontier emerged in the fourteenth century, and it is used for "neutral zone" between empires or states (Haselsberger, 2014.) Haselsberger (2014) also mentioned that:

"Over the years this neutral or empty zones transformed into populated marchlands (also marklands), which were governed by a margrave, whose

purpose was to defend the empire or state against attack from outside." (pp. 509)

Like in the case of Yerasimos statement, which is mentioned before, margraves were the first, and then empires or states have started to draw *a line* to mark their territory. Thus, people were started to distinguish from each other.

Frontiers can also be seen as transition zones. Although there are defensive walls or border pillars in some state boundaries, it is actually an area where people or states meet each other (Popescu, 2011). Kristof (1959) explains that the frontier is an *integrating factor* while the boundary is a *separating factor* (p. 273). It can be seen that the frontier is the transition area from one life to another; however, the boundary is the separating element to distinguish two lives from each other. Kristof (1959) also suggests that frontier is *outer-oriented* because borderlands generally develop their own lives and interest according to their needs and quite different from the central government, while the boundary is *inner-oriented* as it is marked by the central government. However, the boundary is not the border itself; there are no lives in there it is just a symbol for the sovereignty of the state (pp. 271-272).

According to these definitions it can be claimed that the boundary represents a line itself while frontier shows an area or zone which is transitionary by its nature.

2.1.2.3. Border

The term, 'border' is defined as an outer part or edge of something (Gedal and Jeansoulin 1998,: 177, Lunden, 2014,: 16, Haselsberger, 2014,: 509). However, as well as its linear connotation, border connotes something more areal. Merriam-Webster dictionary also defines border as *"the line or relatively narrow space that marks the outer limit of something"* and *"a region along the dividing line between two countries"* (merriam-webster.com, 2017). In this context, Lunden (2004) states that border has more areal meaning than the boundary because boundary that means the line itself (p. 16). Anderson and O'Dowd (1999) also stated that the border meaning is somewhere between the boundary and the frontier (p. 603). In other words, the border is not either a considerable area or zone between two states or the line between

them. On the contrary, it is an area which is used for the political divides or social constructs that were the result of state building and the global state's system (Baud and Van Schendel, 1997, Anderson and O'Dowd, 1999, Haselsberger, 2014.)

Except for its spatial meaning as an area or line, the border is a general concept for the area between the states as a separating element legally but not physically.

2.1.2.4. Borderland

Besides the common confusions between these three concepts, Parker (2006) discusses another notion on the issue. The term *'borderland'* is a region around or between political or cultural entities where borders or frontiers are created while interacting geographical, cultural political or economic circumstances (p. 80). Within this definition, borderlands are a wider area than the frontiers (Cassarino, 2006,: 3). Therefore, borderlands cover all the notions; border, frontier, and boundary.

Parker (2006) explains border and frontier as two types of 'boundary sets'[3] that can occur in borderlands. Borders and frontiers are formed by various types of boundaries, and these two notions are opposite types of divisions. The term border is hard, static and linear while the term frontier is soft fluid and zonal. Moreover, they are made up of multiple, overlapping boundaries (i.e., geographical, political, demographic, cultural and economic) (p. 81). Parker explained this categorization of boundary sets as 'the continuum of the boundary dynamics' (see: Figure 2).

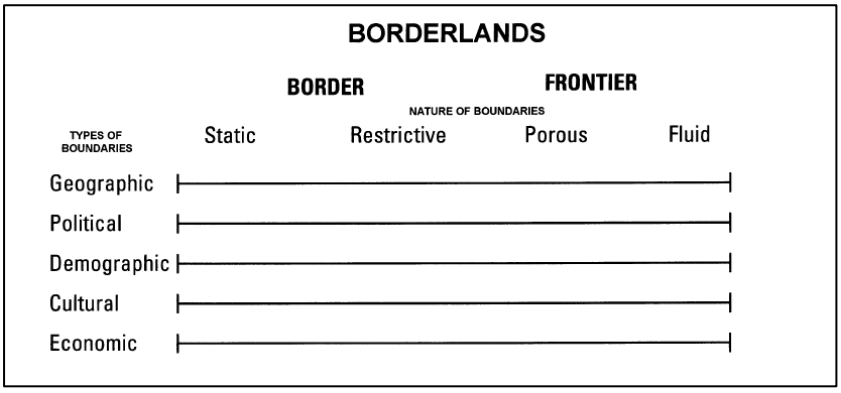


Figure 2. The continuum of boundary dynamics (Source: Parker, 2006; 82)

[3] Parker (2006) claims, borders and frontiers are made up of various types of boundaries like geographic, political, demographic, and cultural. This means that borders and frontiers are two types of '*boundary sets'* which all of them are covered by borderlands (pp: 80-81).

Within boundary sets definitions, borderlands may cover several different types of boundaries within both borders and frontiers. Parker (2006) also explains possible subcategories under these general boundary sets (see: Table 3).

Table 3. Possible subcategories under the general boundary sets (Source: Parker, 2006; 82-91)

Boundary Sets	Subcategories
Geographic Boundaries	o Topographic Features o Physical Character o Climate o Flora and Fauna o Natural Resources
Politic Boundaries	o Political o Administrative o Military
Demographic Boundaries	o Ethnic o Population Density o Health o Gender
Cultural Boundaries	o Linguistic o Religious o Material Cultural
Economic Boundaries	o Extraction of Raw Materials o Transshipment of Commodities o Production of Finish Products o Agricultural Production

On the borderlands, all these boundary sets and their subcategories could be seen. They all have specific meanings according to different time and spaces. Sometimes all types can be observed within one border, frontier or all borderlands, and sometimes just one of them may be the result of the border conditions. That's why border regions themselves are all specific study areas; they all have to be considered both spatially, socially, historically, economically and politically.

As it is mentioned before, border studies literature has emerged through almost all social sciences. However, in the field of urban planning, there are studied in depth except in the works by Haselsberger's (2014). Her article is in the planning perspectives, and she tries to examine borders in this way. Haselsberger (2014) claims that:

"Borders are not just "visible lines" in space or on a map; on the contrary, they are complex social constructions, with many different meanings and functions imposed on them."(p. 507)

Because of this complex structure, Haselsberger (2014) also tends to show the interrelationship between the edge concepts of the border, boundary, and frontier (see: Figure 3). She also uses borders and frontiers as 'boundary sets', and she grouped the boundaries into 4 categories (p. 509).

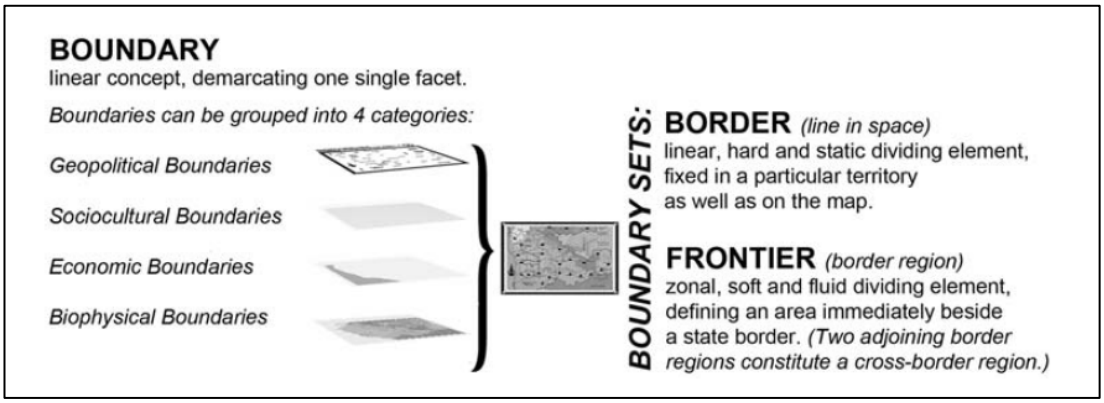


Figure 3. The interrelationship between the edge concepts of the border, boundary, and frontier (Source: Haselsberger, 2014; 509)

Within this boundary sets, Haselsberger (2014) tries to examine the border-related planning challenges within 'the geopolitical-sociocultural boundary relationships, the geopolitical-economic boundary relationships, the geopolitical-biophysical boundary relationships, the sociocultural-economic boundary relationships, the sociocultural-biophysical boundary relationships and the economic-biophysical boundary relationships' (pp. 514-517). According to these relationships, she showed us emerging challenges and the perspectives of planning as well.

2.1.3. Spatial Connotations of the Concepts

According to all these different definitions and explanations, where the concepts (boundary, border, frontier, and borderlands) stand for, it is possible to suggest a simple diagram showing the intrinsic implications of the terms in space (see: Figure 4 and 5). Accordingly one could argue that boundaries could be both visible and invisible in any kind of border regions. These boundary sets cover geographical boundaries, sociocultural boundaries, political boundaries and economic boundaries.

Moreover all these visible or invisible boundaries represent a line itself. In the context of the current research the term, boundary, implies line. The term, *'border'*, connotes something more areal than the boundary but not bigger as a *frontier*. Borders are the first transition areas, and they can be either areal or linear, they depend on their boundary types and their situations both historically and spatially. In addition to these connotations, borders are also virtual concepts; they sometimes do not have spatial connotations on the ground. It is a more legal and political term. Frontiers are the transition zones, and they cover much more area than borders. Furthermore, frontier can include both sides of the boundary in a single narrative. However, in some situations, the term, border, could be utilized to refer only one side of the boundary depending on standing which side of the line. Finally, the term *'borderland'* cover the entire region which can be directly or indirectly affected by the border itself (see: Table 4).

Table 4. The concepts of border condition and their spatial connotations

CONCEPTS	**SPATIAL CONNOTATIONS**
Boundary	linear
Border	linear and areal
Frontier	areal and zonal
Borderland	regional

It is clear that boundary is a line and the other concepts have not linear forms, on the other hand, they have areal, zonal and regional forms. However, it may be confusing to distinguish the differences between border and frontier. As it can be seen in Figure 4 and 5, in the spatial term, frontier could cover more area than the border. In addition to the spatial connotations, the border is a more political, economic and invisible term than the frontier while frontier is a more social, spatial and visible term.

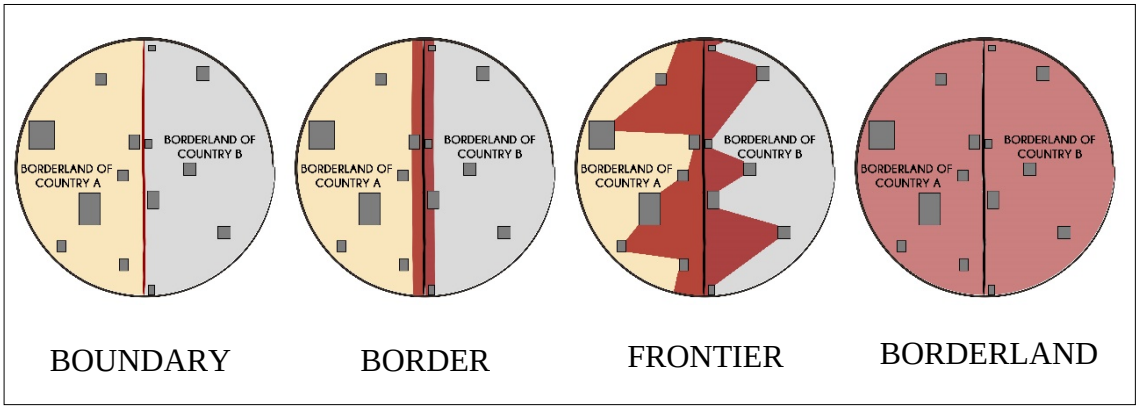


Figure 4. The spatial framework of the border condition

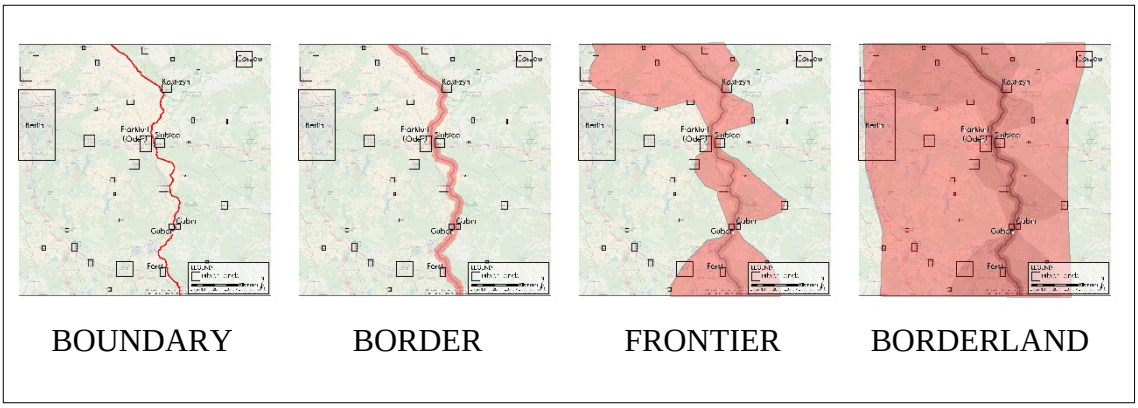


Figure 5. The spatial framework of the border condition within the example of German-Polish Border

These 4 notions, as well as creating confusion in the literature, are not spatially precise. Regarding Figure 4 and Figure 5, making the final connotations of 4 notions are essential.

Boundary: is virtually adapted on the actual physical surface/land designated the territoriality by separation.

Border: is a line of a segment of the boundary which controls the separation and interrelation of the virtual designated portions of the land.

Frontier: is the threshold which condition the fundamental relation between the life at the edge of the border condition with the boundary and its counterpart of the other side of the border.

Borderland: is a region which covers all the notions while interacting political, cultural, geographical or economic entities.

2.2. A Historical View on the Phenomenon of Border Condition

To understand the contemporary types of states, and the border structures, organizations, and relations, the evolution of human societies must be studied first, with reference to the concept of the boundary. As generally accepted, human societies' evolution is divided into three main stages; pre-industrial society, industrial society, and post-industrial society. However, for the pre-industrial period, there should be some subcategories, because of the formation of societies in terms of economy, social, political or military organizations. Kireev (2013) examined the typology of societies into six categories. These are; *1) primitive societies (community and tribes), 2) pre-industrial pre-state societies (chiefdom), 3) pre-industrial state society (nome state), 4) pre-industrial state society (imperial state), 5) industrial society (nation-state), 6) post-industrial society (post state organizations).* According to this social typology, he also explained spatial forms of the boundary (see: Table 5). These societies and their border organizations will be examined under the four different periods in this part of the chapter. Most of the emphasis is, therefore, given on the state organizations.

Table 5. Historical evolution of the notion of the boundary (Source: Kireev, 2013; 55,62)

Types of Society (and its main political organizations)	**Types of Boundary**	**Spatial Shape**
Primitive Society (community and tribe)	Intermittent	Dotted Line
Pre-industrial Pre-state Society (chiefdom)	Frontier	Zone
Pre-industrial State Society (nome state)	Forepost	Dotted Line
Pre-industrial State Society (imperial state)	Limes	Zone
Industrial Society (nation-state)	Linear	Full Line
Post-industrial Society (post-state organizations)	Transnational	Dotted Line

According to the Merriam-Webster Dictionary, the state is a politically organized body of people usually occupying a definite territory (merriam-webster.com, 2017). Moreover, it is recognized by other states. The development of states is rooted in the ancient age. There have been city-states, empires, kingdoms, nation-states, etc. during

the history. Throughout the history, city-states, empires, and nation-states have used different border types to delineate their sovereignty. However, neither city states nor empires delineate political borders. Popescu (2011) showed the main differences between these states briefly as follows;

> *"City state walls performed primarily a defensive purpose. Empires were often composed of discontinuous territories, and their borders were generally unmarked. Nation-states, on the other hand, tend to have well-delineated territories and clearly marked borders" (p. 13).*

During the history, these changing phenomena of borders around the states will be examined to clarify the contemporary understanding of the border condition.

2.2.1. Historical Background of the States' Border

2.2.1.1. Tribes and Villages in the Primitive World and Pre-State Societies

History of states is traced to the city-states in antiquity. However, before that period, there were communities of hunters and gatherers, and they lived within an unmarked territory. Bellezza (2013) argues that the early communities used to protect their living environment without materially marking definite limits. Besides, between hostile tribes, there were *no man's lands*[4] , which were wide respect areas. These no man's lands have become thinner and thinner. Comparatively, in the contemporary world's noman's land between nation states are too thin or almost nonexistent.

According to Kireev (2013), the earliest type of boundary is the *'intermittent'*. This type of boundary is characterized by its minimal spatial form which is signified by a dotted line. The critical point is that it was the society itself who had control over the border. The primary way of control was the economic activities for example; spatial mobility of hunting (pp. 50-52).

In the pre-state societies, after the hunters and gatherers settled agricultural communities emerged. These settled communities led to changes over interactions between societies both in the natural and social environment. According to Kireev

[4] No man's land: an area of unowned, unclaimed, or uninhabited land (merriam-webster.com, 2017)

(2013), the intermittent line became a frontier in this period of time. It was also based on economic activities. However, the control over frontiers, which represented the zones between settlements, changed from societies to the public, as a not-specialized regulation (pp 50-52).

2.2.1.2. City States and Empires in the Antiquity

A city-state is a sovereign state that comprises a town and the surrounding countryside. Between the city and the surrounding, there were generally walls, pillars or military installations as a boundary. However, the primary purpose of these boundaries was not delineating the political borders or separate inside from outside. On the outside the walls, the city also controlled agricultural lands. The main purpose of the walls was defending against an attack by other city-states and 'barbarians'. The other factor was the commercial usage. The walls and frontiers of the states were constructed to control the trade. Frontiers around the walls were undefined, and they determined the ancient city-states, while there were no defined, demarcated boundaries.

When we came to the new formation of settlements, which were the first states, the main changes were about the new methods of control over the border. These new methods were the military and political coercion (Kireev, 2013). The reason of emerging new military and political methods was the need of protection from outside. This new organization of border created a new boundary type in the history. Kireev (2013) called that type *"forepast"* and the main difference from frontier is that its spatial form was a kind of dotted line (pp. 50,52).

About the limits of the state in antiquity, because of the confusions between walls like border lines and frontiers which were controlled by states, there are some debates. Although new maps show clearly defined borders in the ancient world, the reality was much more complicated and different (Diener and Hagen, 2010). Popescu (2011) argues as follow;

> *"While there is significant consensus that state limits in antiquity closely resembled zonal frontiers, the presence of sharp separation lines such as the*

walls of ancient empires seem to indicate a close resemblance to contemporary borderlines" (p. 29).

Because of their resemblance to the borderlines of nation-states, it seems that there are similarities between them. However, the borders in antiquity were different from contemporary borders, especially in their meanings. According to Diener and Hagen (2010), states or empires in antiquity were bounded by frontier zones rather than demarcated borderlines. Moreover, even the borders in antiquity was a line; ancient states were not entirely surrounded by walls, pillars or military installations. The most famous walls, which are Roman *limes* and the Chinese Great Wall, did not surround the states, on the other hand, both had some sections interrupted by open spaces (Popescu, 2011). These open spaces showed that ancient borders were permeable to interaction with outside or to trade. Kireev's (2013) term of *forepost* is dotted line because these open spaces were frontier zones in the no man's lands (pp. 50, 52).

In terms of being more illustrative, the structure and functions of walls and boundary pillars in the antiquity are examined. As in The Roman Limes or the Chinese Great Wall, ancient borders were often marked in the landscapes by walls or boundary pillars, and they can be assumed a territorially linear form. However, this linear form cannot be understood as territorially marked places, their aim is especially for defending the frontiers, maintaining the roads and levying taxes and commerce (Popescu, 2011). In addition to the aim of the border in antiquity, boundaries also organized by the Roman Empire according to the hierarchy of spaces included regions, cities, settlements or villages (Anderson, 2013). Primarily, boundaries were built between yards, estates, villages or other societies, counties in Roman Empire. It had not well defined outer boundaries, but inside the Empire estates, latifundium[5] and provinces had well-defined boundaries marked with stones or other suitable objects (Katajala, 2015). These not defined outer boundaries of the Roma Empire were seen as a border between barbarism and civilization (Laine, 2015). In addition to marker-stones, boundaries between estate villages or parishes generally followed natural

[5] 'Latifundium' definition: *A large landed estate or ranch in ancient Rome or more recently in Spain or Latin America, typically worked by peasants or slaves.* (Oxforddictionaries.com, 2017)

edges like rivers, ditches, hedges or roads (Hooke, 1998 and Reed, 1994 cited in Katajala, 2015, p. 62).

These different types of borders in ancient times show that there are conceptual differences between ancient and modern state border lines. As Popescu (2011) said that, the ancient borders had a primarily defensive and commercial meaning. Walls and fortifications outside the states or empires were built mainly as defense lines to protect the cities against 'barbarians' and to control trade. They were not built to mark the sovereignty of the state. On the other hand, protecting the people, commerce and living in delicate places was more important in ancient time than marking the state sovereignty. It can be better understood as zonal frontiers rather than linear borders between sovereign states. Moreover, the walls or pillars were not continuous lines within these frontiers. This is the most explicit difference between states in antiquity and the nation-states.

2.2.1.3. The Imperial States in Medieval Era

During the medieval era, there were empires, kingdoms, duchies, free cities or any others. Up to French Revolution, these state organizations were dominant over the World system. The main difference between them is that nation-states are a politically organized area in which a nation and state occupy the same space. An empire could be seen as a territory, and it controlled over weaker areas and ruled them as colonies. A kingdom can be seen as similar to empires, and it is also a territory defined by allegiance to a king.

In the medieval era, temporal instability and territorial ambiguity were the most prominent features of state borders. The territorial structure of states in this era was complex and overlapping. For example, one king could possess land inside the kingdom of another king. Thus, in medieval Europe, no particular territorial configuration of power dominated in duchies, principalities, kingdoms, empires, free cities and others. In this sense, the control of cities and villages was more important than control territory (Popescu, 2011). Medieval kings ruled people rather than a defined territory (Katajala, 2015).

In terms of physical structure, the borders in the medieval era were usually in the form of ‘linear’ natural thresholds such as rivers, streams and mountain chains. This is the basis of medieval border formation. However, with these linear boundaries, there were ‘zones’ as border and also ‘dotted line’ as boundaries. Former included forests, lakes or moors, latter were markers such as gorges, fords, stones, tree stumps, and trees. These orientations of border formations can be seen as an abstract line which was not a straight line (Katajala, 2015). Within these types of society, Kireev (2013) used the term ‘limes’ as a border and explained this term similar to the forepost and frontier in terms of controlling the borders. He also argues that these types of boundaries were not linear, but they were like fortified border-lines in the form of zonal borders.

The relationship among territory, group identity, and state sovereignty differed significantly from that of antiquity. For most people and citizens, local villages and towns were more important than the land of whole empires’ or kingdoms. Thus their territorial identity was limited to their own places where they lived. People from different villages or cities within a kingdom did not relate to each other as citizens of a kingdom. The rule of a kingdom tied them not the identity of territory or territorial sovereignty (Popescu, 2011).

In the medieval era, territories of states or border concept were different from that of nation-states. The borders of the medieval states were inherently fluid frontier zones. There were marches in this era. Marches were organized frontier regions that ranged in with the circumstances from districts well integrated within the state to newly acquired territories that were only partially organized and inhabited. As it is mentioned before, like the Roman limes or the Great Chinese Wall, their general purpose was that of advanced defensive territories and transition zones (Pohl, 2001).

According to Popescu (2011), in contrast to the meaning of the territorial border of the nation-states, in this period, boundaries between class, property ownership, and religious affiliation were much more meaningful than borderlines. However, towards the end of the medieval era, the notion of state borders had started to change especially in Western Europe. Sovereignty was still understood in individual terms, as authority over people rather than territory but more precise state borders acquired increased

importance. Over the time, porous form of border structure was replaced by the fixed border lines (pp. 32-34).

2.2.1.4. The Nation States in the Modern Era

Coming to the Modern Era, the situation had started to change. Nation-state, nationalism, the notion of territory came up first in this period. The origins of the modern state system and the modern political order based on boundaries of sovereignty, internationally recognized and territorially demarcated states are often traced to the 1648 Peace of Westphalia that ended a period of ongoing war in Europe (Popescu, 2011, Laine, 2015). States became increasingly defined in territorial terms as an individual spatial unit. In political thinking and in international law, borders have become sharp lines of territorial sovereignty that separated states. The spatiality of the limits of the states was reduced to a linear dimension. Because the notion of nationality gained importance, and the institution of the nation-state, the concept of the territorial border as a political line of separation between states gained validity (Popescu, 2011). In this industrial (nation-state) period, Kireev (2013) explains boundary types of nation-states as a linear and in the form of 'full line', not interrupted with any kind of spatial objects. The linear border has been controlled by the nation-state not only with military-political but also economic, cultural and social regulations.

According to Popescu (2011), the French Revolution in 1789 made a key contribution to the modern states, territorial sovereignty, group identity, and borders. The term, nationalism has emerged (p. 35). With this term, both society and states have changed. Popescu (2011) explains them;

> *"First, nationalism gave people a vital stake in the territorial state. […] The aristocracy was the state. Now, the state claimed to include everybody living inside its border. The state itself was nationalized. Second, people switch from being the subjects of a ruler to being citizens in a territory administered by a state apparatus that claimed to represent them directly. […] Third, the territory of the state became the territory of the nation as well. […] Fourth, sovereignty over state territory switched from the person of the ruler to the nation. […] Last but not least, the borders of the states became the borders of the nation as well.*

Now they were national borders, charged with holding together the social life inside the nation-state. Interstate borders became international borders" (pp. 35-36).

Because of the state and nation formation throughout this period, the discourse of 'others' started to be recognized. There is a clear division between "US" and "THEM" (Paasi, 1996, 2003 cited in Popescu, 2011, p. 36). The reason for this division is the main purpose of the borders which is traditionally ordering society by regulating their movements in space (Popescu, 2011). To regulate the people according to their behaviors within a demarcated boundary, the questions should be tried to answer: *"Who belongs where? Who is an insider? Who is an outsider? Who is part of us and who is part of them?"* (Popescu, 2011, p. 8) Nature never separated human beings in space. On the contrary, people have been doing this to distinguish here from there. However, in this modern period with the notion of nation-state territoriality, this separation or this mediation caused a space separation where people live together.

At the turn of the twentieth century, state borders could not be imagined as zonal frontiers anymore. Territorial borderlines become standard bordering procedure for the organization of political space (Popescu, 2011, p. 37). Frontiers became a line during whole the period of nationalism ad nation-state. Boundaries between states have been stable, and there have been fences, walls or watchtowers to obstruct the cross-bordering movements.

2.2.1.5. Transnational Regions in the Post-Modern Era

Within the globalized world, new questions have started to emerge like what is the form of future states or organizations or what is the form of the borders of these organizations. Throughout these questions and ambiguous shape of states in the Globalized World, some new concepts emerged. However, this new types of organizations and borders are not explicit and cannot be examined indeed, because it is still in transformation. Kireev (2011), defines a typology of boundaries in this new world as a *'transnational'*. However, Kireev (2011) also adds that this new typology of boundary started only about half a century ago even in Europe and North America. Its spatial form is also a 'dotted line' (p. 53).

The straight lines of boundaries between nation-states have disappeared with some transnational organizations like EU. There is also the notion of borderless-world started to appear in the name of *deterritorialization, reterritorialization, debordering* and *rebordering* (Popescu, 2011). Borders have not dissolved, but they become increasingly permeable to allow rapid and sustained cross-border exchanges (Newman, 2006). Now, international borders are porous (Wilson and Donnan, 1998). When it comes to these days, it can be seen the permeability in borderlands because of economic reasons. This permeability is actually about the economic policy regulations between nation-states; it is not about the borderlands, border regions, the citizens or their lives. According to Popescu (2011), from a political economy perspective, these deterritorialization and debordering processes are understood in terms of the spatial characteristics of successive rounds of capital accumulation. Deterritorialization and debordering are unstoppable phenomena leading to nonterritorial and borderless social relations and the demise of the nation-state (pp. 70-73).

In addition to these concepts another type of organization, which lead to trade freely, have occurred. Enclopedia Britannica explains free-trade zones as follow: *"Free-trade zones also called foreign-trade zone, formerly free port, an area within which goods may be landed, handled, manufactured or reconfigured, and re-exported without the intervention of the customs authorities. Only when the goods are moved to consumers within the country in which the zone is located do they become subject to the prevailing customs duties. Free-trade zones are organized around major seaports, international airports, and national frontiers—areas with many geographic advantages for trade"* (Britannica, 2017). These interventions lead to countries more open to another country and give them the opportunity for being accessible.

According to Graziano (2018), nation-states are not in a crisis with all like these interventions and new types of organizations. The liberalizations of markets, the creations of free-trade zones, the creations of custom unions and political and monetary unions did not give guarantees of security and welfare to the states (p. 6). Because of that, besides the new terminology like deterritorialization or debordering, or borderless unions or free-trade zones or any other interventions do not have the

effect of making the borders permeable and changing the nation-states to another version. In fact, on the contrary, walls between states continue to rise sturdier. Although the fall of the Berlin Wall at the end of the Cold War is a symbol, the boundaries between nation-states have been getting stronger since that time.

2.2.2. Spatial Transformation of Border Condition in History

In urban history, people have lived in communities, and they have determined their living areas according to their daily lives, their rituals, their organizations and the relations with others since Neolithic period. Within this concept, states have emerged in time, and their borders, boundary organizations and relations have been changed spatially, socially, economically and politically. The permeability of the boundaries has also changed in time as the description of the no man's lands has changed with the new spatial form (see: Table 6).

Looking at Table 6, we see that the most significant changes of border conditions in history occur in their formal transformations and their permeability. Throughout the history, borders have changed from zonal types to linear types. The separating lines have emerged more sharply to distinguish people from each other and to create the discrimination of 'us' and 'them'. With this formal transformation in the borders, the form of no men's lands has also changed. The area, combining and connecting the segregated people, has disappeared and become linear to demarcate the territorialities.

Table 6. Typology of boundary condition in history

Historical Periods	Types of Social Organizations	Spatial Connotation of Border Condition	Permeability of Boundaries	Noman's Lands
Pre-Industrial Period	**Primitive Hunters and Gatherers**	Discontinues lines around tribes	Porous	Regional-All natural lands between settlements (forests, sees, mountains, etc.)
	Primitive Agricultural Settlements	Zonal frontiers between settlements as a border	Porous	Regional-All natural lands between settlements (forests, sees, mountains, etc.)
	First States	Lines around states within a zonal frontiers	Semi-Permeable	Zonal-Empty or almost empty areas in terms of settlements between states
	Imperial States	Areal boundary lines between states	Semi-Permeable	Areal-Areas between boundary lines
Industrial Period	**Nation-States**	Straight lines between states	Impervious	Almost none
Post-Industrial Period	**Transnational Organizations**	The linear form of boundary with interruptions in some regions	Semi-Permeable	Almost none

2.3. Concluding Remarks

The notion of the border is a complicated concept, and it has several meanings through different historical periods and contexts. In this chapter, firstly, the notion of the border is tended to be examined etymologically. Then, contradictory meanings of the boundary, border, frontier, and borderlands have been discussed, and their spatial meanings have been given to clarify the intrinsic meanings of them. The aim of that study is to prepare a base for the design problematique of paired border cities within the context of the 'boundary', 'border', and 'frontier'. Later, border notion is discussed

historically from the era of primitive societies to that of the post-industrial world. Finally, their spatial representation has given to reveal how the structural changes of borderlands have realized in history. Therefore, in contemporary border conditions will analyze and the design tactics and interventions would be helped from that historical changes of the notion of the border.

In the following chapter, the typology of the boundary and the typology of paired border cities in the contemporary world will be studied to understand the border condition of nation-states in the light of spatial meanings.

CHAPTER 3

TYPOLOGY OF INTERNATIONAL BOUNDARIES AND PAIRED BORDER CITIES

"All problems and all cases occurring in the country can be observed in border towns. However, any cases or problems that can be seen in the border towns cannot be beheld in the rest of the country."

(Prof. Dr. H. Neşe Özgen, personal interview, November 2015)

This chapter mainly focuses on both international boundaries and also the border towns and cities. First, the typology of the international boundaries and borders will be mainly discussed. Later, border towns and cities will be explained and the typology of the 'paired border cities' will be analyzed. Finally, a comprehensive typology of paired border cities will be shown based on the selected categories.

Border studies are arranged in many of the research fields. In every study area to understand the border or boundary, there are some classifications and typologies made. As it is mentioned before, every border area and every boundary have their own characteristics, and all of them should be evaluated within itself. Because of that, if one border area, paired border city or one boundary will be discussed, primarily its spatial characteristics will be studied. According to different disciplines in social sciences, there are different typological approaches for boundaries, borders and border cities.

3.1. Typology of International Boundaries and Border

As mentioned in Chapter 2 Parker (2006) suggests boundary sets. These are geographic, political, demographic, cultural and economic boundaries. However, this classification of boundary does not represent the formation of the international

boundaries. Because of the complexity of modern nation-states and different characteristics for every single nation-state, their borders also have very different characteristics. Therefore, according to Kireev (2015), different classifications and typologies are one of the most essential study areas for borders and boundaries. While making a literature review, it is possible to recognize several different typologies for boundaries. However, in this chapter, three different typological approaches will be discussed.

3.1.1. Classifications Based on the Physical Features of the International Boundaries

The primary classification of boundaries is based on their physical entity to demarcate the boundary. These entities can be a natural sign like a river, forest, dessert, etc. or they can be an artificial element like stones, walls, trenches, etc. or they can be a line which follows an invisible line like parallels of latitude, the meridian of longitude or they can be culturally invisible demarcations. All these constitutional elements used as classification tools differently. However, in this part it is examined in two classes; physical boundaries and cultural boundaries.

3.1.1.1. Physical Boundaries

The oldest classification of international boundaries is natural and non-natural (artificial) boundaries (Bakhashab, 1996: 36, Boggs, 1940: 22). This distinction has become classic, and it was loosely connected that other classic distinction which is ‘good borders’ and ‘bad borders’ at the beginning of 20th century. The notion of good was used for the natural boundaries, which are made by nature like rivers, forests, desserts, etc. The notion of bad was used for the ‘human-made’ (artificial) boundaries. The beginning of the 20th century was before the First and Second World War. During this period, this classic distinction which was ‘good’ and ‘bad’ borders were used in border studies from a military point of view (Van Houtum, 2005, p. 675). After the First and Second World Wars, the boundaries of the nation-states began to be demarcated more strictly. The studies on the classic distinction of the ‘natural’ and ‘non-natural’ boundaries have been continued. However, it could be correct to say that all international boundaries are human-made whether they called ‘good’ or ‘bad’

borders or classified ‘natural’ or ‘artificial’ because nature does not separate human beings according to their nations, languages, economics, cultures, etc.

3.1.1.1.1. Natural Boundaries

Natural boundaries are the elements to demarcate the boundary lines between states. There are lots of natural element for using the border like rivers, lakes, seas, mountains, forests, deserts, swamps and marshes, bays and straits. Some of them are the linear borders between two nation-states like rivers while others are the zonal borders between two national states like dessert or mountains. The most common natural borders, rivers, mountains, and deserts, will be examined in this section.

3.1.1.1.1.1. River Boundaries

Historically, rivers were used as a border to protect the city states or empires, and their roles as boundary still continue. Therefore, rivers have always been seen as demarcated lines during the first creations of the border. Generally, the middle line of the river is used as a boundary line between two nation-states. There are some risks using rivers as a boundary. One of them is the precise position of the river may change over time, and it could lead to some problems between two nation-states especially if there is a conflict between them. Another problem would occur since some of the rivers are used with the purpose of transportation. These are navigable rivers, and others are non-navigable rivers. When the control of the river is over two countries, it could lead to some political issues between two nation-states.

There are lots of example from all over the world because of historical and functional aspects of the rivers. The most well-known river boundary is on the between U.S and Mexico border; Rio Grande River (Figure 6). In addition to Rio Grande River, there are two other rivers also used as a boundary between U.S. and Mexico; Tijuana River and Colorado River.

In North America, between U.S and Canada boundary there are also lots of rivers forming the boundary. One of the most known is the Niagara River. Two sides of the river there are two cities one of them is Niagara Falls, New York, U.S. other one is Niagara Falls, Ontario, Canada (Figure 6). In addition to Niagara River there are lots

of other river boundaries between U.S and Canada border; Detroit River, Halls Stream, Pigeon River, Rainy River St. John River, etc.

In addition to North America, several river borders can be seen in South America like Bermejo River; Argentina-Bolivia, Parana River; Argentina-Paraguay and Brazil-Paraguay, Uruguay River; Argentina-Uruguay, Brazil-Argentina etc.

In Europe, there are also lots of examples of river boundaries. One of them is the Oder and Neisse River between Germany and Poland border. This river became a boundary after W.W.II before that time there is no border in that region because of this situation lots of cities were divided by these rivers. One part of the cities stays in Germany while other parts became Poland City (Figure 6). In addition to Germany-Poland border example, there are other boundary rivers in Europe. Rhine River is one of them; it separates France from Germany, Switzerland from Germany, the Netherlands from Germany and Switzerland from Liechtenstein. There are lots of paired border cities on both sides of this boundary river (Figure 6). In addition to these examples there are any other rivers as a boundary like Termon River; Ireland and the United Kingdom, Danube (Tuna) River; Hungary and Slovakia, Romania and Bulgaria, Romania and Ukraine, Serbia and Romania, Maritsa (Meriç) River; Greece and Turkey, etc.

In Asia, rivers are also used as the boundary between the nation-states. For example between China and Russia border, there are four rivers which are demarcated the boundary. These are Amur, Ussuri, and Argun Rivers (Figure 7). In addition to China and Russia Border Rivers, there are other rivers which are used for demarcation. Some of them are; Makong River; Laos and Thailand, Laos and Myanmar (Burma) (Figure 7), Tumen River; North Korea and China, North Korea and Russia, Yalu River; North Korea and China, etc.

In the Middle East, there are also some river boundary examples. Aras River is divided Turkey from Armenia, Iran from Nakhchivan (Azerbaijan), Armenia and Azerbaijan (Figure 7). Jordan River is also used as a boundary between Jordan and Israel (Figure 7). In addition to these rivers, Tigris River is used as a boundary between Iraq and Turkey in one part of the border, Shatt al-Arab River is another river boundary in the Middle East between Iraq and Iran.

Finally, when it comes to Africa, there are any other examples. In Figure 8, some of the river boundary examples in Africa can be seen. Some of them which divide two or more states are Congo River; the Democratic Republic of the Congo and Republic of the Congo, Orange River; South Africa and Namibia, Zambezi River; Zambia and Zimbabwe, Zambia and Namibia, etc.

As it is seen in the examples, rivers are mainly used in the demarcation of the borders between nation-states. However, when it is examined in detailed, it can be observed that some of the rivers have a distinctive role while others connect the two nation states. These connecting and dividing features are examined later in this study with some examples around the world.

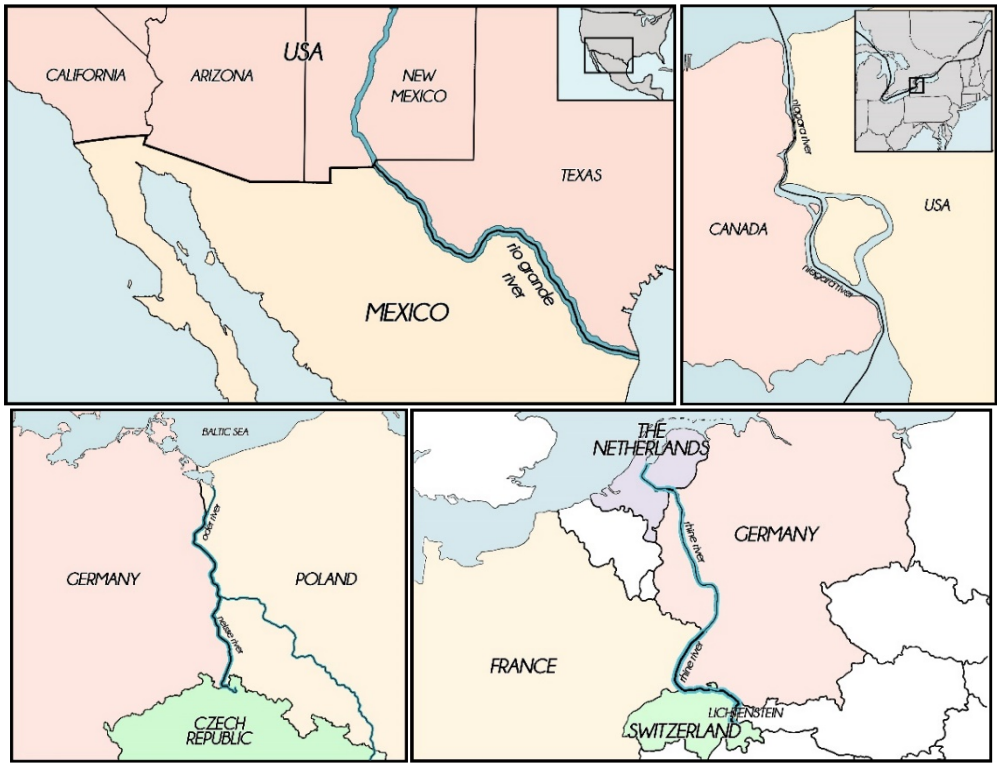


Figure 6. Left Top: (U.S-Mexico Border – Rio Grande River), Right Top: (U.S-Canada – Niagara River), Left Bottom: (Germany-Poland Border – Oder and Neisse River), Right Bottom: (Germany-Netherlands-France-Switzerland-Lichtenstein Border – Rhine River

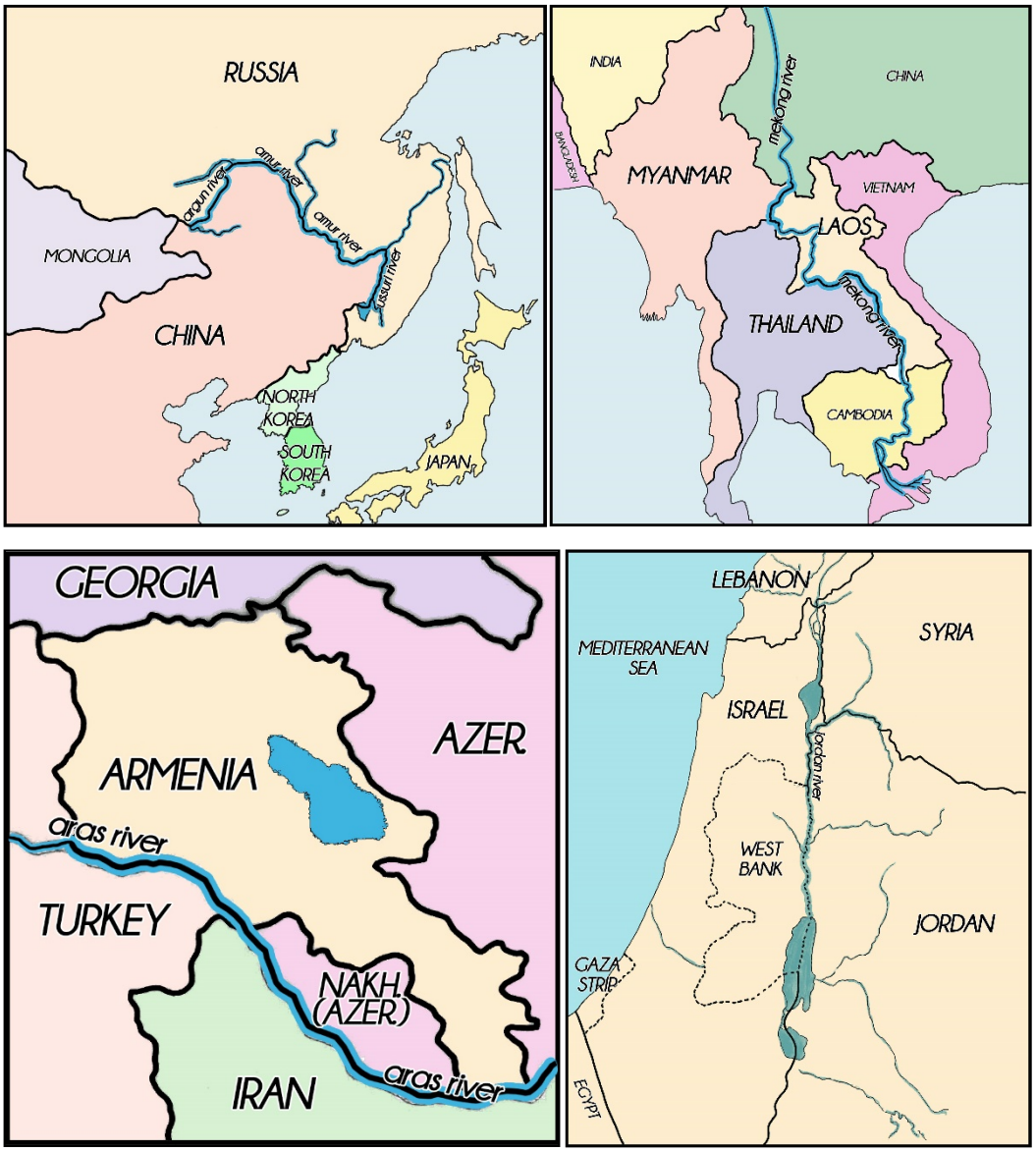


Figure 7. Left Top: (Russia-China Border – Amur, Argun, Ussuri Rivers), Right Top: (Laos-Thailand-Myanmar Border – Mekong River), Left Bottom: (Turkey-Armenia-Azerbaijan Border – Aras River), Right Bottom: (Jordan – Israel Border – Jordan River)

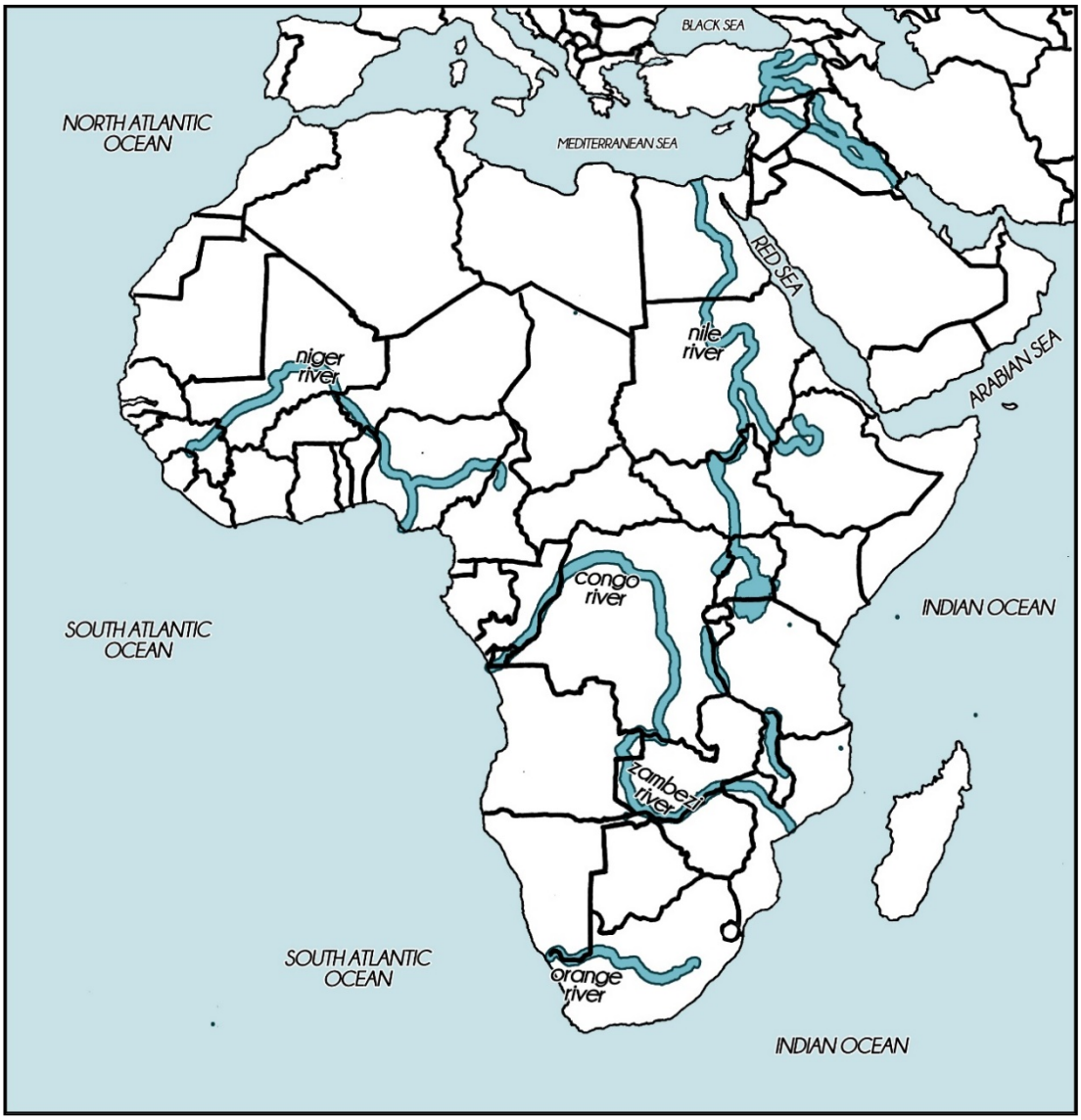


Figure 8. African boundaries – Congo, Orange, Zambezi River

3.1.1.1.1.2. Mountain Boundaries

Mountains have also been used as a boundary if it is hard to cross. These are effective boundaries if two sides of the border do not want to contact each other; however, they are not useful boundaries between two nation states if there are some agreements or close relations or affiliations (Jones, 1943; 104). When the mountains become a boundary, some of them arise from their own physical structure, but in some of the mountain boundaries, other constitutional elements are used like railways, tunnels or aerial navigations.

The most well-known mountain boundaries are the Himalayas in Asia and the Andes in South America. Former are the highest mountains in the world, and it is separated India from rest of the world for several centuries (see: Figure 9). Latter was sometimes called “the spine of South America” are used for demarcation for boundaries between Chile and Argentina, Chile, and Bolivia, Bolivia, and Peru (see: Figure 9).

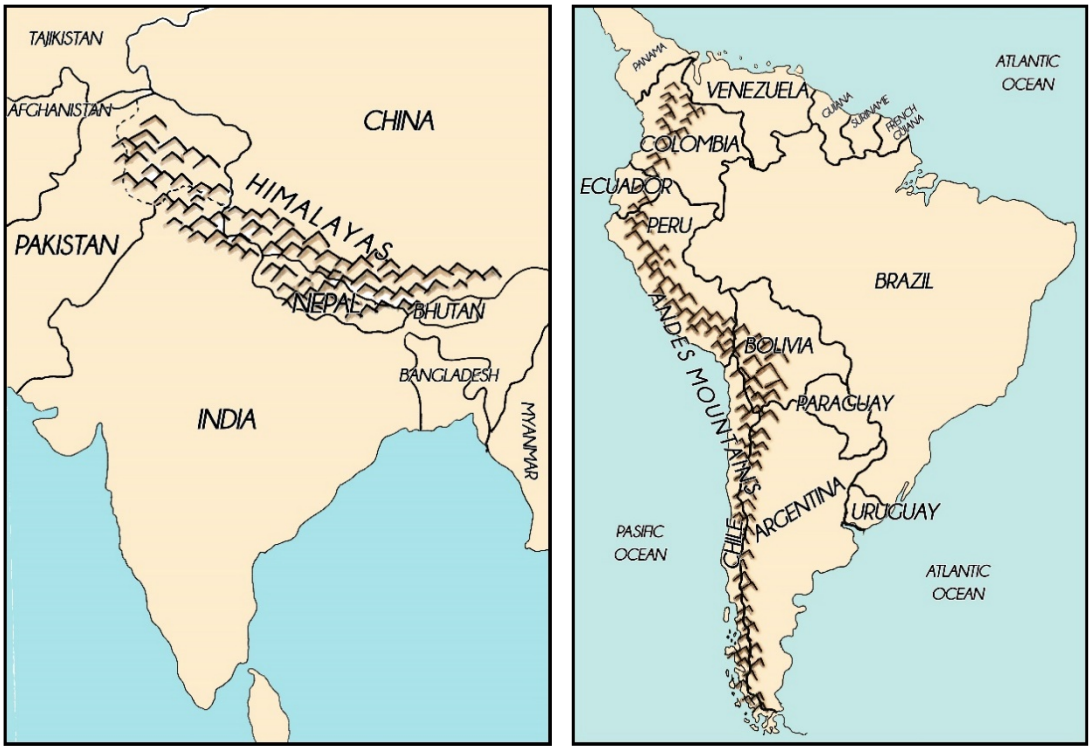


Figure 9. Left: (Himalayas Mountains between India and Rest of the World), Right: (Andes Mountains between Chile and Argentina, Chile, and Bolivia)

3.1.1.1.1.3. Desert Boundaries

Deserts are effective boundaries since it is hard to cross them like mountains. However, unlike in the mountains, they are much more zonal borders because of their physical characteristic. Thus, they are flexible to define the boundary lines. There is a crucial aspect of the demarcation of the deserts borders, which is about the inhabitants. Most of the inhabitants in deserts are either nomads or oasis-dwellers, for them, water sources and mountains are significant. Therefore, when using deserts to demarcate the boundary, it is essential that not to separate the sources from the inhabitants (Bakhashab, 1996: 38, Jones, 1943: 105-106).

Most of the deserts and desert boundaries are in the Asia and Africa. The Nubian Desert settles between Sudan and Egypt, The Libyan Desert is between the Egypt and Libya, the Kalahari Desert scans part of the eastern boundary of South West Africa, Than or Great Indian Desert fringes the boundary between India and West of Pakistan (see: Figure 10) (Bakhashab, 1996: 38).

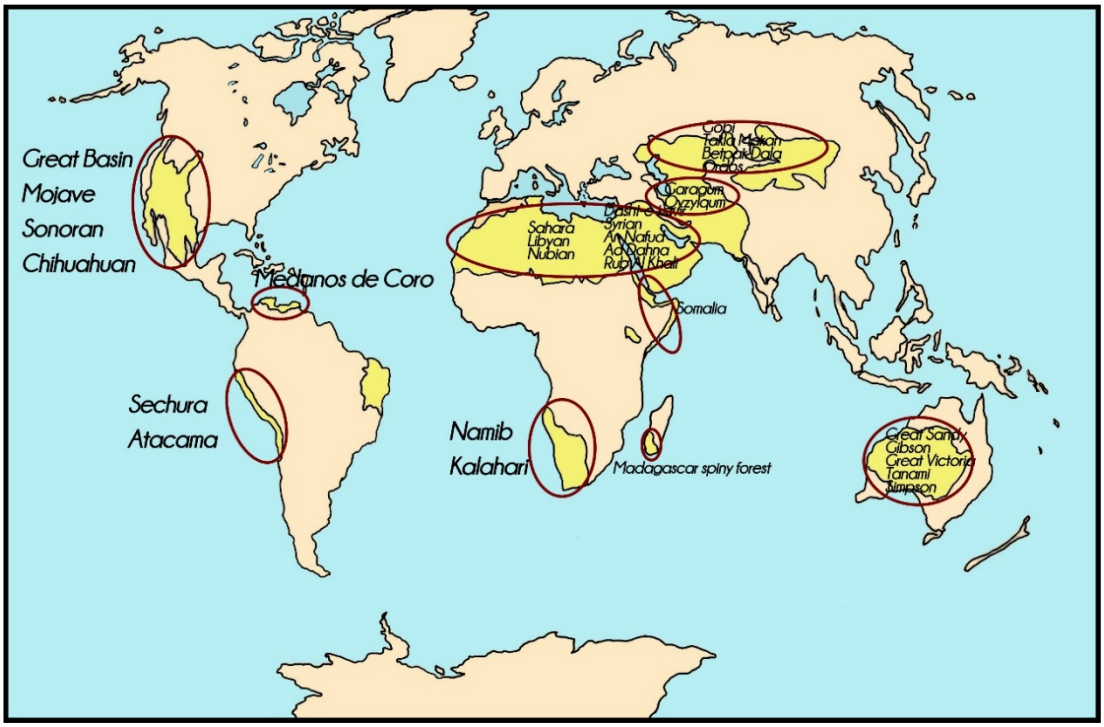


Figure 10. Deserts of World

3.1.1.1.2. Artificial Boundaries

According to Fawcett (1918), artificial boundaries have been used when there are no any natural boundaries to demarcate the political boundaries. Another important reason for artificial boundaries is that in the past, when empires extended too far from their center of power, their controlling power on the frontiers of the states decreased and defending their territory became difficult. Therefore, artificial boundaries were built to defend their territory (p. 62). These boundaries which were seen as bad boundaries are the man-made demarcations between two states (Guo, 2015: 29-30, Van Houtum, 2005: 675). Throughout the history, artificial boundaries have been used to demarcate the territory of the states. Stones and claws, monuments, posts, bars, walls, towers, gates, and trenches are some of the examples of the artificial boundaries. Since the city-states emerged, states have used lots of different physical elements like

monuments, walls or trenches. Especially the walls have been significant in terms of its meaning for the states, cities, citizens, and outsiders and in terms of the memory of both inhabitants and the outsiders. The distribution of the ‘us’ and ‘them’, ‘insider’ and ‘outsider’, ‘citizen’ and ‘foreigner’, ‘here’ and ‘there’ and many others are the results of these kinds of visible, perceivable and memorial barriers. The walls from the city-states to today’s World are the most crucial elements for these distributions, and they will examine in detail.

On the other hand, other artificial boundaries are geometric boundaries. These types of boundaries have emerged in the colonial period, and they ignore the existing natural, cultural, ethnic or linguistic pattern of the region.

3.1.1.1.2.1. Geometric Boundaries

Geometric boundaries are followed by straight lines. These international boundaries can be made up of meridians of longitude, parallels of latitude or arcs of a circle (Bakhashab, 1996: 39, Jones, 1943: 113-114). These types of lines are easily located on maps and are easy to determine by GPS. However, on the real surface of the earth, they are invisible, and it is hard to recognize them and also they are not fit with the physical or cultural characteristics of the region.

North America boundaries are one of the examples of geometric boundaries. Part of the northern U.S. boundary with Canada is a straight line along 49° north latitude, running from Lake of the Woods between Minnesota and Manitoba to the Strait of Georgia between Washington State and British Columbia (Bakhashab, 1996, p. 39). Another geometric boundary example from North America is the boundary between Alaska and the Yukon Territory along the north-south arc of 141° west longitude. In addition to these, a part of the U.S. and Mexico boundary is also a straight line except from the river boundary (see: Figure 11).

Another example is the boundary between Iraq and Saudi Arabia. It is diagonal and straight which is drawn according to some geometrical references (see: Figure 12).

The evaluations of borders (antecedent, subsequent, superimposed and relict boundaries) will be explained later but mentioning the superimposed boundaries in

here will be useful. European colonial powers drew up the boundaries in Asia and Africa in the late 19th and early 20th centuries irrespectively the natural or cultural features. Therefore, these types of borders are seen especially in Africa and Asia as a consequence of colonial state boundaries. Some of them are boundaries between Egypt-Sudan, Sudan-Chad, Sudan-Libya, Libya-Chad, Algeria-Mali, etc. (see: Figure 12).

Figure 11. Political map of North America

Figure 12. Political map of Africa

3.1.1.1.2.2. The Wall

History of mankind started with the hunter-gatherer tribes. They lived in nature, however, their first borders were caves after they founded that they needed to protect themselves from nature. Caves could be assumed as first boundaries for humans. Agricultural lifestyles and first settlements and farms are the most significant development for humans throughout the history. After people started to live together, leaders of societies began to arise. The struggle for survival among different tribes emerged, and these leaders started to fight. Because of that people began to protect

their settlements with more powerful boundaries from their own genus. With the emergence of the cities, the city walls erected to protect their city and to control trade.

Uruk is accepted as the first known city of the World. Uruk settled in the Mesopotamia region and civilization has emerged in that region between the Tigris and Euphrates (Narev, 2014). Walls also began to rise around cities throughout Mesopotamia shortly after civilization began in the region around 4500 BCE. City wall of Uruk was one of the first defensive walls around the World. Gates and watchtowers were also constructed with city walls and usually a ditch running around the outer perimeter of the wall which could be filled with water (Mark, 2009).

In ancient times, the creation of cities has been based on legends. One of the famous stories about the foundation of a city is 'Life of Romulus'. Remus and Romulus were brothers. *"While Romulus was casting up a ditch where he designed the foundation of the city wall, Remus turned some pieces of work into ridicule, and obstructed others; at last, as he was in contempt leaping over it, some say Romulus himself struck him."* (Rykwert, 1988) This city was the Rome, and it was founded with fratricide. According to Rykwert (1988), the Romans considered the walls of the city to be sacred and inviable but not their gates. If the walls were sacred enough, Romans could die for them while defending. In the Roman period in addition to the wall, there were 'pomerium'. It was not a line it was borderland, and it could also be used for agriculture. The defensive walls were built within the pomerium. In the Roman period cities, there were two different boundaries one of them was a wall; another one was the actual limit of the city-states (Kostoff, 1992; 12, Rykwert, 1988).

The very first wall which marked the territory, the national boundary was erected by the Sumerian King Shulgi of Ur 2038 BCE. The wall was 250 kilometers long and built between the Tigris and Euphrates rivers to keep the invading Amorites out of Sumerian lands. This wall was unusual in that it did not surround a city and it was a first of its kind (Mark 2009). The most famous examples of these kinds of walls are Roman limes and The Great Wall of China. The Latin word *limes* was used to designate a land boundary of the empire. Roman *limes* are marked boundaries and the provinces of the Empires. In some parts of the Roman *limes*, there were defensive

demarcated walls like Hadrian's Wall and Antonine Wall (Ployer, Polak, and Schmidt, 2017). In Figure 13, the boundary of the Roman Empire can be seen. In addition to the Roman limes, The Great Wall of China was one of the most important walls around the World (see: Figure 14). It is a long border fence or separation barrier that extends across the northern portion of China. Its purpose was to restrict migration from Central Asia. Its length is approximately 13.000 miles, and it had been constructed over 2000 years (Jordan, 2014, p.92).

Figure 13. Roman limes

Figure 14. the Great Wall of China

Source: image.travelandleisure.com/sites/default/files/styles/1600x1000/public/1492reat-wall-china-intersection-GWOC0417.jpg?itok=UsU0QjQl

When coming into the modern era, walls and defensive walls structure were still being constructed. Berlin Wall which separated East Berlin and West Berlin after WWII is one of the symbols of the Modern World walls. Another example is the Green Line which divides North and South Cyprus. The wall between US-Mexico is another modern wall which has been constructed to separate Mexico from the U.S. and to prevent illegal immigration and organized crime. Between Turkey-Syrian borders, there is also another modern wall to prevent the interaction and migration. Although after the cold war and after the deconstruction of the Berlin Wall, new World border relations has been started to shift 'borderless' world phenomena with some interpretations such as EU or Schengen area. Today, strong, impermeable boundaries have emerged, and in support of these boundaries, walls continue to be built between the borders of the two nation-states. Walls are still seen as the most powerful structure

for protection and separation. According to Carter and Poast (2017) between the years 1800 and 2013 in many cases wall construction is about economic security. Because of the economic differences between the nation-states, the transportation of the people and the goods are created illegally in poor countries while highly regulated by the wealthier countries.

In summary, walls have been in the world since the human civilization, but their purposes have been changed during the history from trade to the protection and from demarcation to economic security.

3.1.1.2. Cultural Boundaries

Cultural boundaries are the method to demarcate. Since people started to demarcate their territory, they have used the similarities inside and differences of outsides. Inside the boundary is allocated for 'us', outside the boundary is for 'them'. People, citizens and states separate themselves from others according to religious, language, ethnicity, and common history or background different from those of 'the other'. To give an example demarcation of Europe in terms of language is appropriate. European countries were used language to distinguish themselves from others. However, in these types of boundaries, there is not any special line to demarcate the boundary like geometrical or physical boundaries. Cultural boundaries just examine the differences between the two sides and other types of boundaries are used to mark the territory.

3.1.2. Classifications Based on the Emergence of Boundaries

One of the earliest classifications of the boundaries was made by American geographer, Richard Hartshorne (1933, 1936). Hartshorne described the process of the boundaries with some notions. Hartshorne (1936) used 'antecedent', 'subsequent, 'superimposed', 'relict' and 'natural' boundaries as a geographical term (pp. 56-57). In this part of the chapter, the first four terms will be re-described as the natural boundaries which were discussed before (see: Figure 15).

3.1.2.1. Antecedent Boundaries

According to Hartshorne (1936), an antecedent boundary is a political boundary which came first before the cultural landscape. In other words, an antecedent boundary

existed before the area was settled. Citizens who live near the boundary or the region choose to live there knowing that it is a border (pp. 56-57). These types of boundaries could be associated with natural boundaries. Antecedent boundaries might generally be rivers, lakes, mountains, etc.

3.1.2.2. Subsequent Boundaries

Subsequent boundaries are demarcated according to the existing settlement patterns of the region. The differences or similarities of two sides of the boundaries are considered in terms of their culture, religious, language or ethnicity (Hartshorne, 1936, p. 57 Newman, 2006, p. 174). The borders of Pakistan and Bangladesh or Northern Ireland are good examples of subsequent boundaries. Moreover, according to Hartshorne (1936), most of the European countries are also subsequent, and it could be observed the conformity with the major or minor division of the natural or cultural regions (p. 57).

3.1.2.3. Superimposed Boundaries

Superimposed boundaries are the demarcation lines which are imposed by an outside colonial power (Hartshorne, 1936, p. 57 Newman, 2003, p. 125, Newman, 2006, p. 174). Superimposed boundaries ignore the existing cultural, ethnic or linguistic pattern and generally the geometrical boundaries are used to mark the settlements like in Africa and Asia which are colonial states with the European powers. One of the reasons for using straight geometrical lines in Africa in separating states is coming from this colonial system.

3.1.2.4. Relict Boundaries

Some of the boundaries could be abandoned politic, economic or any other reasons. These types of boundaries can be called relict boundaries (Hartshorne, 1936, p. 57). In other words, relict boundaries do not exist, but their effects on the region, on the landscape or on the citizens are still recognized. The most important example of the relict boundary is the Berlin Wall. It does not exist today, but its effect still continues both economically and physically.

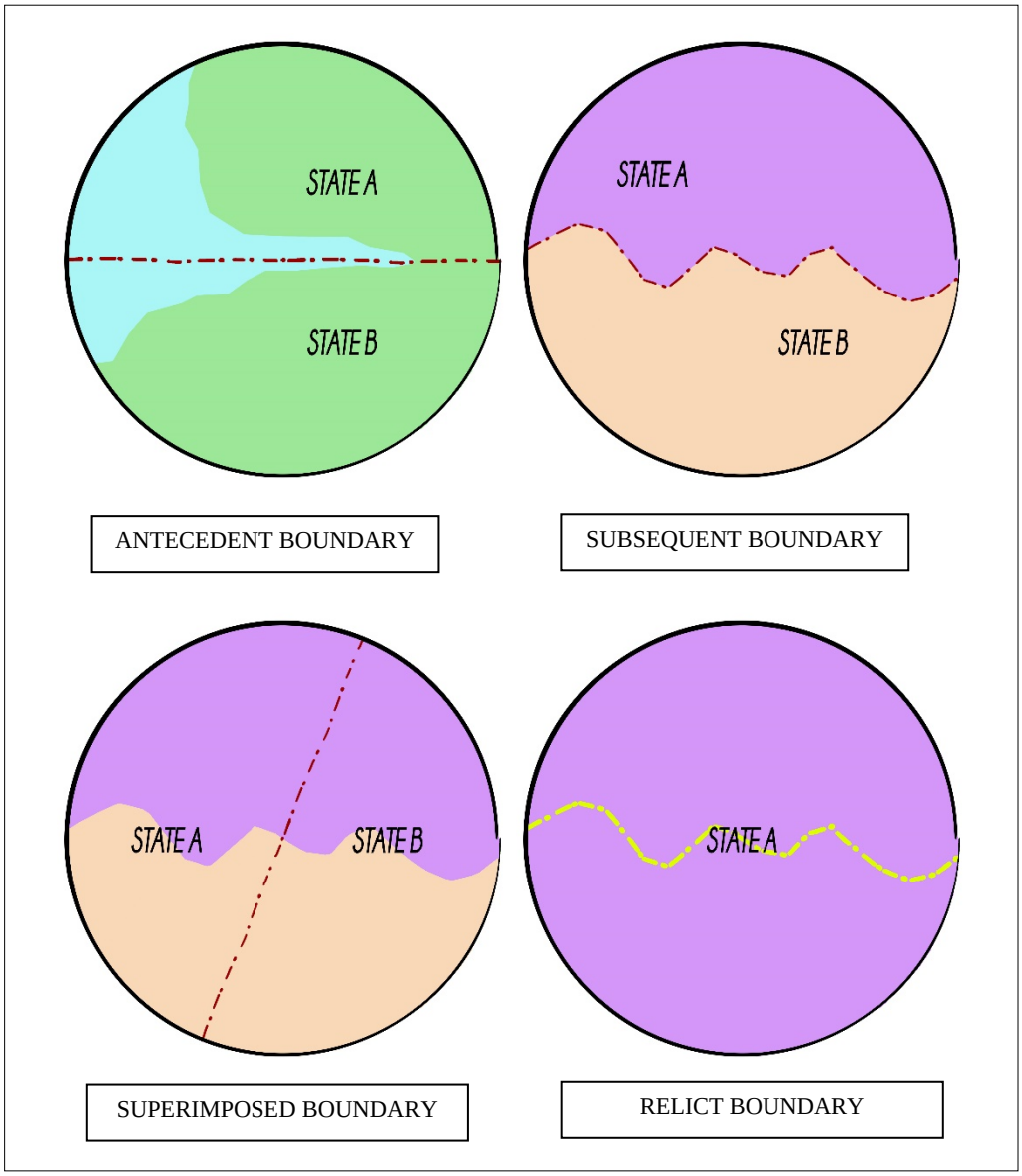


Figure 15. Classification of boundaries on emergence (Adapted from http://slideplayer.com/slide/4861084/#)

3.1.3. Classifications Based on the Relations between Two Sides of the Boundaries

Boundaries and borders between two or more nation-states also have regulative functions on them. They can be described as dividing barriers or connecting entity (Kireev, 2015). In general terms, border relations are explained with closed, open or controlled borders. However, to explain the cross-border movements and the trans-border interactions in more detail Oscar Martinez (1994) propose four model of borderlands interaction; alienated borderlands, coexistent borderlands, interdependent borderlands and integrated borderlands (pp. 5-10) (see: Figure 16). Martinez (1994)

used the term of ‘borderland’ instead of boundary, border or frontier. Regulative and relational typology of the nation-states’ borders could cover the whole border region and also the political issues based on the nation-states. Because of that using the term of ‘borderland’ would be appropriate in this classification, and in this study, borderland will be used for the regulative and relational classification.

3.1.3.1. Alienated Borderlands

This model refers to borderlands where any cross-border interactions are not allowed. This situation exists when neighboring states have serious conflicts such as warfare, political dispute, intense nationalism, ideological enmity, religious animosity or ethnic rivalry (Martinez, 1994, p. 6). Scottish and English frontier in the 15th and 16th century was alienated borderlands. Moreover, the Berlin Wall was one of the known examples of the alienated borderlands in that time. Today, there are also some borderlands which are closed entirely. North and South Korea is a good example which is called ‘Korean Demilitarized Zones’. The Armenia and Azerbaijan border is completely closed, alienated borderlands, because of the state of war between two countries over the Nagorno-Karabakh conflict. Furthermore, other well-known completely closed borders are Lebanon-Israel and Syria-Israel borderlands.

3.1.3.2. Coexistent Borderlands

According to Martinez (1994), coexistent borderlands are the second stage for two neighbor states which have conflict but these conflicts are less problematic, or some agreements are made to reduce the effects of conflict. The border between the states remains slightly open and allowing for the development of limited binational interaction. It can be observed that the residents of the country deal with each other because of the effects of the conflict and the history. However, inhabitants of the borderlands develop closer relationships. In the relational perspectives, these kinds of borders allow for controlled cross-border interactions (p. 8). Ecuador-Peru, Israel-Egypt and Russia-China borders are some of the examples of coexistence borderlands.

3.1.3.3. Interdependent Borderlands

The third model of the relational typology of borderlands is interdependent. In this type of borderlands, societies of the border regions are symbiotically linked each other. These borders allow for a significant amount of exchange both in goods and people (Martinez, 1994, p. 8, 9). There are still controls over the cross-border interactions but the inhabitants of the two nations are friendlier to each other, and they carry on cooperative relationships. According to Martinez (1994), one of the good examples of the interdependent borderlands is U.S-Mexico borders (p. 9). However, in today's' situation putting the U.S-Mexico border in the coexistent borderlands is more appropriate. Although there is a significant amount of flow of people and goods, official interaction across the border is very limited, and the control over this border is highly strict. In Europe, there are such interdependent borderlands. Their main purpose is to prevent illegal immigration, especially from North Africa. These European countries are Italy, Spain, and Greece which have borders between the outside of the EU. Another example from Europe is between Greece and Turkey. The flow of people and goods are allowed within the controlled borderlands (Velde, 2012, pp. 117-118).

3.1.3.4. Integrated Borderlands

Martinez's (1994) last model is integrated borderlands. In this type, neighboring nation-states eliminate all political differences and existing barriers and the controlled over the borders. In integrated borderlands, trade, the flow of goods and human movements are allowed. The economies of the two countries are functionally merged, and inhabitants of the borderlands perceive themselves as in the same social system (pp. 7-9). The most well-known example of the integrated borderlands is in the Schengen area in Europe. Within the Schengen Area, people and goods can easily move without any control and restrictions in the borderlands. There is also Nordic Passport Union which covers Sweden, Finland, Iceland, Norway and Denmark since 1954. In this area, the flow of people and goods are allowed. Belarus and Russia border is another example they can be seen as a union state, and there is no control over the borderlands.

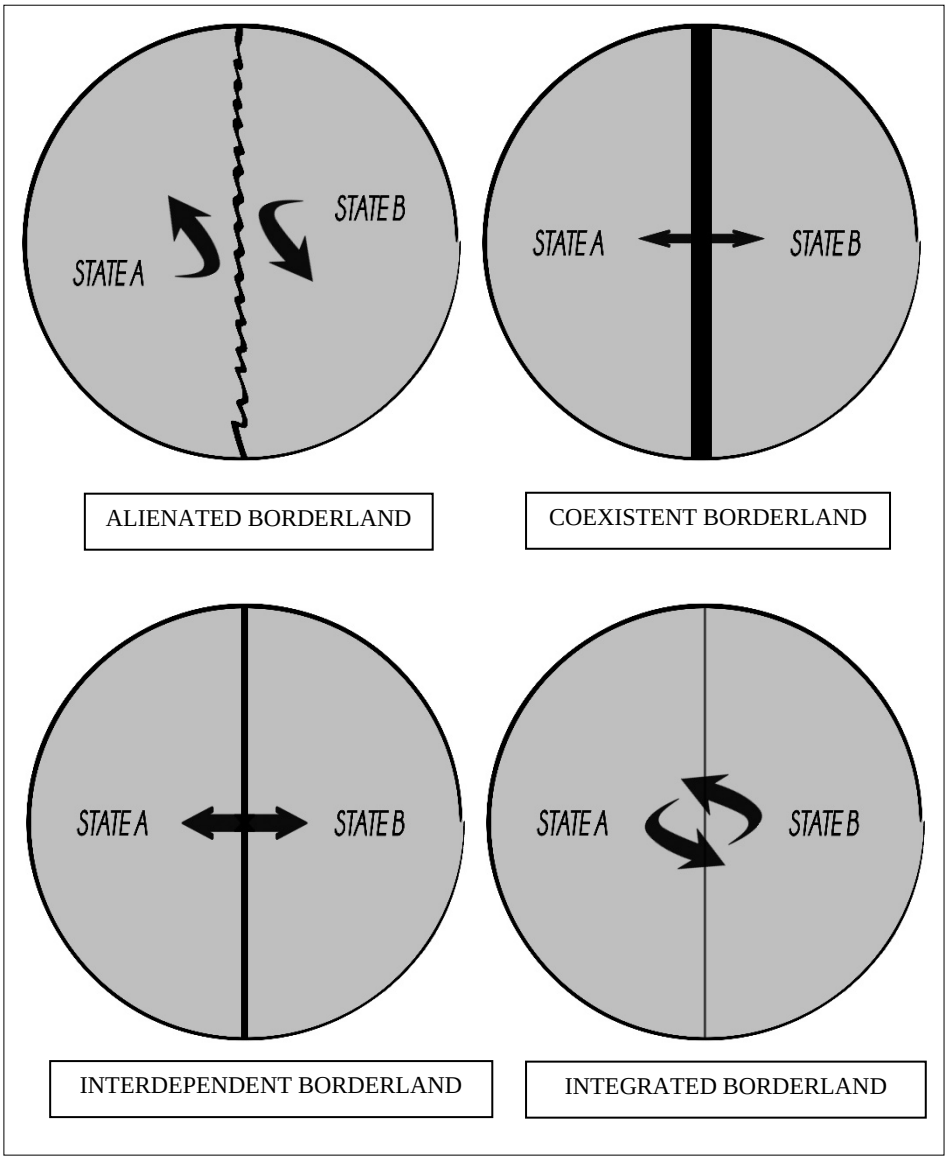


Figure 16. Classifications of borderlands based on relations (Adepted from Martinez, 1994, p. 7)

3.2. Border Settlements

Throughout the history, border notion has always been an attractive study subject. There are several reasons for that. First, concrete manifestations of tension and contradictions in border towns can be clearly seen. Second, the differences in wealth and power between the two sides of the boundary line can be directly observed. Third, for those researches who are interested in urbanism like urban anthropologists, sociologist or others, everyday life of international boundaries and their specific characteristics could be observed in the border cities (Nugent, 2012. pp. 557-558).

Fourth, trans-border activities even about the mobility of people or goods usually occur in the borders, and borders of different nation-states have different rules about these mobility actions. Last but not least, although all problems and changes in a nation-state can be observed at the border, any events that occur at the border cannot be observed rest of the nation-state (Prof. Dr. H. Neşe Özgen, personal interview, November 2015). Referring to all these reasons, it could be correct to claim that each border settlement has its own characteristics in terms of urban morphology, economy, social life, trans-border activities or even in smuggling. Therefore, a study on border cities provides an extensive and detailed framework of research.

3.2.1. Border Cities

Border city is the city which settled near the border. The most appropriate definition of border cities is in the words of Buursink (2001) as follows:

> *"A border city is, in our opinion, a place that is more or less dependent on the border for its existence. That is to say, it is not just a city located close to the border, but it also came into existence because of the border. Without the border, it would not be there" (pp. 7-8).*

All over the World, it is possible for cities to face each other across the boundary. In this study, these types of border cities will be examined. However, different types of border cities have different formation, location or names which lead to semantic confusion in the literature. For example, there are lots of names for them like double cities, sister cities, twin cities, companion cities, paired cities, trans-border cities, cross-border cities, border-crossing cities, binational cities or any others. Some of them cause some problems because they are not the exact connotations of the border cities, for example, the notion of 'twin cities'. According to Buursink (2001), it is clear that 'twin cities' is a misnomer for paired border cities because of the intrinsic meaning of the 'twin' concept. Twins are likeminded and identical formations with a strong feeling of belonging together (p. 15). However, any examples of paired border cities do not meet the concept of a twin. Their geographical situation, history, urban morphologies, economic situations, political positions, cultures, languages, ages, sizes or any other characteristic features have to be exactly the same to be twin cities.

Because of that kind of the ambiguity of concepts, the notion of ‘paired border cities’ will be used in this study.

3.2.2. Paired Border Cities

Paired border cities are the cities separate from each other but almost adjacent settlements across the two sides of the international boundary. Paired border cities vary in their distances from each other, their economic or social situations or their formations. In this study, paired border cities will be examined in three types in terms of their formation. These are ‘partitioned’, ‘duplicated’ and ‘cross-border activity dependent’ paired border cities (see: Table 7).

3.2.2.1. Partitioned Paired Border Cities

“Partition occurred mainly in Central Europe, after World War 2, when previously united cities were divided into two different entities by drawing new boundaries.” (Buursink, 2001, p.8). This kind of borders leads to the creation of two nations within one city. The drawn line or river or other boundary elements split up a united city. After the boundary line, one part of the city started to change according to its new nation-state’s rules, and a different cultural formation starts to emerge in there. Because of these changes, two totally different ethnocultural populations have to live across the borders. One of the main examples for partitioned paired border cities is on the German-Polish border. Until the end of the World War II (1945), the cities on the border were actually united cities. At the end of the war, Germany’s eastern border was retreated and ended in the waters of Oder and Neisse rivers. In other words, these border settlements, which seem to be two separated towns along both sides of the rivers, have become border cities after 1945. These cities have ‘partitioned paired border city’ characteristics. These partitioned cities are very new as a border settlement. There are some common conditions, which are explained in Chapter IV, in all of these cities.

3.2.2.2. Duplicated Paired Border Cities

“Duplication refers to situations where establishment of border settlement sooner or later was followed by the rise of a second settlement on the other side of the border.”

(Buursink, 2001, p. 8). In this type of border cities, the second city is generally developed to benefit from the border economy, or it is developed because the second cities are inside the more developed country. This kind of border cities can be seen between the US-Mexico border, and it is a critical development for these areas. In detailed information, after the war between the U.S and Mexico, a sharp borderline has been drawn along the Rio Grande in the east side of the border and walls and fences on the west side of the border with geometric boundaries. According to Nugent (2012), there are 14 pairings, yielding a total of 28 towns/cities in all (p. 560). If we look at these paired cities, it can be noticed that each city has had its copy on the other side of the boundary. According to Buursink (2001), after the line is drawn, American colonists left their south bank settlements and settled down north of the river, but close to their former places. With this changing, every Mexican city now has its American counterpart (pp. 9-10).

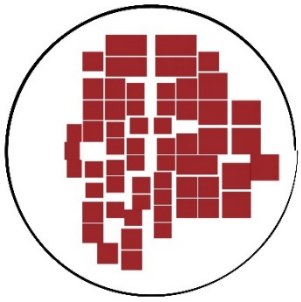
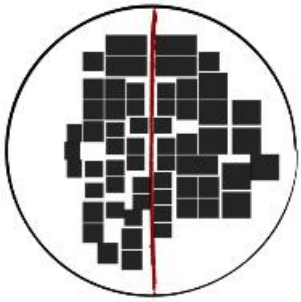
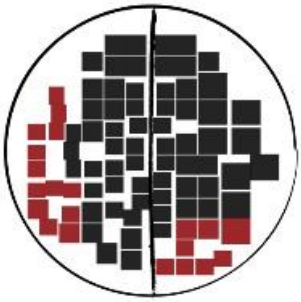
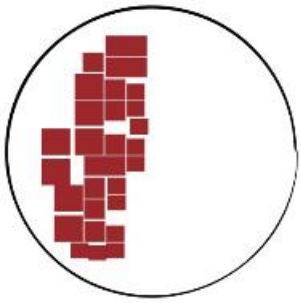
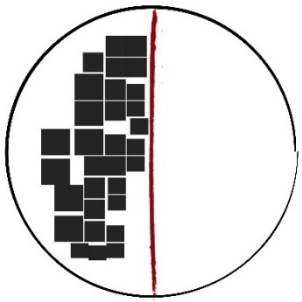
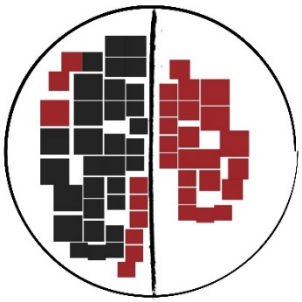
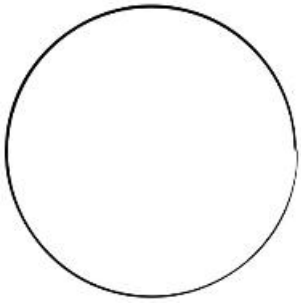
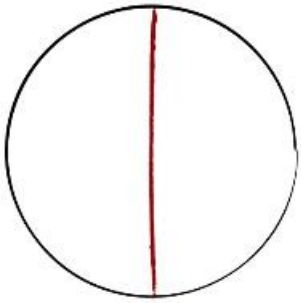
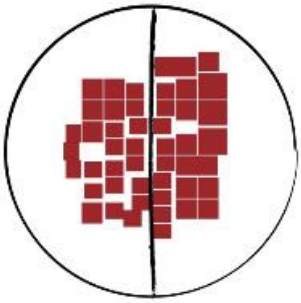
3.2.2.3. Cross-Border Activity Dependent Paired Border Cities

These types of paired border cities especially occur in African borders. *"The colonial dispensation was conductive to the emergence of border towns where they did not already exist."* (Nugent, 2012, p. 566). Although there are some exceptions in African borders, most of the border cities have developed within this concept. Generally, people prefer to live in border zones to benefit from the 'illegal' opportunities of borders like smuggling and others. According to Nugent (2012), in most cases, there are no tremendous economic differences except for South Africa and its surroundings (p. 566). Although, South Africa border cities are also in the same wealth condition with its neighbors, as in the whole borders around the world, South African border cities are gateways to move to a more developed country. For this reason, almost all African paired border cities have similar characteristics.

As it is seen in Table 7, the paired border cities have three types in terms of their formation processes. In the first type, 'partitioned paired border cities', there was one unique city before the demarcation. After the occurrence of the international boundary, a unique city is split up, and two different cities created. In the second type, 'duplicated paired border cities', there was a city before the demarcation. After the demarcation

processes and after the occurrence of the international boundary, on the other side of the border, another city develops near and across the first one. The last type, 'cross-border activity dependent paired border cities,' there was not any settlement in the region before the demarcation. However, after the demarcation processes, two different cities are developed on both sides of the boundary, synchronously.

Table 7. Formation of paired border cities

	BEFORE DEMARCATION	DEMARCATION	AFTER DEMARCATION
PARTITIONED PAIRED BORDER CITIES			
DUPLICATED PAIRED BORDER CITIES			
CROSS-BORDER ACTIVITY DEPENDENT PAIRED			

3.3. Concluding Remarks

On the issue of border condition, there have always been some classifications both on boundaries and border cities. In this chapter, first, different classifications of boundaries are tended to be examined. Spatial inferences and examples of classifications based on components, emergence and relations have been discussed. Later, a classification of paired border cities in terms of their formation processes has been suggested.

In the following chapter, in terms of these different classifications, a World Map will be created to show where the different types of borders, boundaries and paired border cities are located. While creating the informative maps, the ArcGIS program is used, and all boundaries and paired border cities are examined one by one on the World Maps and Google Earth. Ideally, there are 18 types of paired border city to be compared. These types can be seen in Table 8 to understand the categorizations which create the World Map of border conditions. Connecting links and relations, functional differences using land-use decisions to reveal different morphologies of border conditions will use in comparison to understanding the differences between these types and effects on the cities. However, in today's World, all the 18 types of paired border cities do not exist. First 12 types of them in addition to Type-13 and 16 are located in World while type 14-15-17-18 do not exist. This shows that in terms of the category of relations closed boundaries cannot create border cities because of its relational framework. In the following chapter, some examples of the existing 14 types of paired border cities will be selected, and their differences will be shown with some mapping techniques. In other words, today in the World, 14 types of them exist however it does not means that this situation will be the same, on the contrary, some of them might disappear, or the other types will emerge which do not exist now.

Table 8. Comprehensive typology of ‘paired border cities’ based on selected categories

RELATIONS	CHARACTERISTICS	PAIRED BORDER CITIES	TYPE
OPEN	NATURAL	Partitioned	Type 1
		Duplicated	Type 2
		Cross-Border Activity Dependent	Type 3
	ARTIFICIAL	Partitioned	Type 4
		Duplicated	Type 5
		Cross-Border Activity Dependent	Type 6
CONTROLLED	NATURAL	Partitioned	Type 7
		Duplicated	Type 8
		Cross-Border Activity Dependent	Type 9
	ARTIFICIAL	Partitioned	Type 10
		Duplicated	Type 11
		Cross-Border Activity Dependent	Type 12
CLOSED	NATURAL	Partitioned	Type 13
		Duplicated	Type 14
		Cross-Border Activity Dependent	Type 15
	ARTIFICIAL	Partitioned	Type 16
		Duplicated	Type 17
		Cross-Border Activity Dependent	Type 18

CHAPTER 4

BOUNDARIES AND PAIRED BORDER CITIES IN INTERNATIONAL CONTEXT: A WORLD PANORAMA

This chapter questions the international boundaries and paired border cities on account of their contemporary types. In this chapter, the categories that boundaries belong to and the paired border cities will be investigating by mapping to understand how it is related to the world dynamics and lastly, the comparison of 14 types of paired border cities in the light of urban networks, land-use patterns, and cross-border relations will be suggested.

Considering the previous studies on border condition, there are some specific classifications for the boundaries such as physical features, emergence, and relations. Even though all boundaries are examined only depending on these primary classifications, they are not enough to understand all types of boundaries in details. The reason for the analyzing the international boundaries around the world is to understand the different dynamics which are essential for designing processes of the borders.

4.1. Distribution of the International Boundaries around World

Hinges on the all boundaries around the world, it can be argued that each has unique characteristics. However, there are also some certain similarities such as relations and components they have. Both in the definition of the types of paired border cities and in the design problematique of the border condition, these classifications will be helpful. Similar problems with similar features allow more accurate solutions and design tactics on the issue of paired border cities and the planning.

4.1.1. Categories of International Boundaries In Terms of Relations of Neighboring States

First of all, it indicates that the relational features of boundaries, which are open, controlled and closed, are analyzed.

4.1.1.1. Open Boundaries

While creating the typology of boundaries in terms of relations, open boundaries can be defined as to enable free movement of people between nation-states without any restriction or security control. Schengen Area in Europe is the most well-known example of open boundaries. Another example is the East African Community which covers Kenya, Tanzania, Uganda, South Sudan, Rwanda, and Burundi. Bolivia, Colombia, Ecuador, and Peru also share open boundaries under the agreement of the Andean Community. There are other examples of them in World which are included in the mapping study as well. Designing on the open boundaries provide the designers, planners or architects more convenient places. Due to the open relations between the two states, design tactics would be enhanced contractually and integrated.

4.1.1.2. Controlled Boundaries

Controlled boundaries can be defined as the type of borders that allows movement of people with some restrictions and controls. To cross these types of borders people have to show their passports and visa on the border ports. Most of the boundaries around the World exemplifies this type. The border between the U.S and Mexico, India and Bangladesh, Turkey and Greece and any others are some of the examples of controlled boundaries. Crossing the border of some controlled boundaries relatively are more accessible than the others. For example, while showing passports is enough to cross some borders while some others need a visa and other special permission to cross. Moreover, within one boundary crossing by the citizens of one side of the boundary are more difficult while the citizens of another side can cross the border more efficiently such as the U.S-Mexico citizens. Within these situations on the borders, controlled boundaries give the designer some challenge. Thus, they have to consider the checkpoints with the fortification elements and their features between two nations.

While designing the controlled boundaries, knowing the degree of the control or the conflict between the two states will help in designing the border conditions.

4.1.1.3. Closed Boundaries

Closed boundaries prevent the movements of people between two states. These types of boundaries usually have fences, walls and other types of barrier elements on them. Demilitarized Zone (DMZ) between North Korea and South Korea is an example of closed boundaries; it can even be called a closed frontier. The Armenia and Azerbaijan border are also entirely closed due to the conflict of Nagorno-Karabakh. In this study, if a crossing border gives some restrictions on the people after crossing the border, or on the spatial characteristics between two states, these types of boundaries are also determined as closed borders. Border within the Cyprus and the city of Jerusalem are the examples of different types of closed boundaries. Therefore, after crossing the boundary, if some restrictions about travel across to other states emerge for foreigners or citizens or if a boundary is too hard to cross with spatial elements, these are considered as in the category of closed boundaries. On the closed boundaries, designing processes creates different and difficult challenges. However, in these types, designers, planners, and architects are more comfortable. They have immense working areas because of lots of conditions and restrictions.

4.1.2. Categories of International Boundaries In Terms of Components

Secondly, in terms of the constitutional elements of the border, international boundaries can be classified into two: natural boundaries and artificial boundaries.

4.1.2.1. Natural Boundaries

While creating the world map of international boundaries, natural elements can be exemplified as rivers, lakes, mountains, and forests performing barriers and signifiers of the border condition. For example, the Oder River between Germany and Poland, the Andes mountains between Chile and Argentine or Lake Huron and Lake Erie between U.S and Canada could be considered within this genre. The most specific founding about this mapping is that the border settlements are generally located on

rivers. There are lots of cities near the river. This features has to be consider in detailed and this generalization will help in the designing processes.

4.1.2.2. Artificial Boundaries

Types of artificial boundaries include the elements are like geometrical elements, meridians, parallels, roads and streets or walls and fences as artificially set demarcation lines. For instance, east part of U.S and Mexico boundary, in the north boundaries of Africa, or some parts of Russia and Kazakhstan boundary are known the examples of artificial boundaries. A street as a boundary line on an open boundary provides different challenges than a controlled boundary. That is why all the characteristics of the boundaries have to be examined in the designing processes.

In Figure 17, it is clearly seen that most of the boundaries around the world are controlled, except some agreements and arrangements such as the Schengen Area. While %70 of the World boundaries are controlled, %26 of them are open, and just %4 of them are closed in type. That means that, currently, nation-states allow people to move with or without restrictions if there is no serious conflict between the two neighboring countries.

In a comparative framework, %60 of boundaries are natural whereas %40 of them are artificial around the World. As it is seen in the Figure 18, countries are used the natural elements to demarcate their territories. Along these natural elements (especially along the rivers), border cities occur.

In the following part of this chapter, the paired border cities in the World will be analyzed in order to reveal their essential features and problematic issues. In the analysis, international boundaries are examined to show the current problems of paired border cities.

Figure 17. International boundaries around the World with their relation

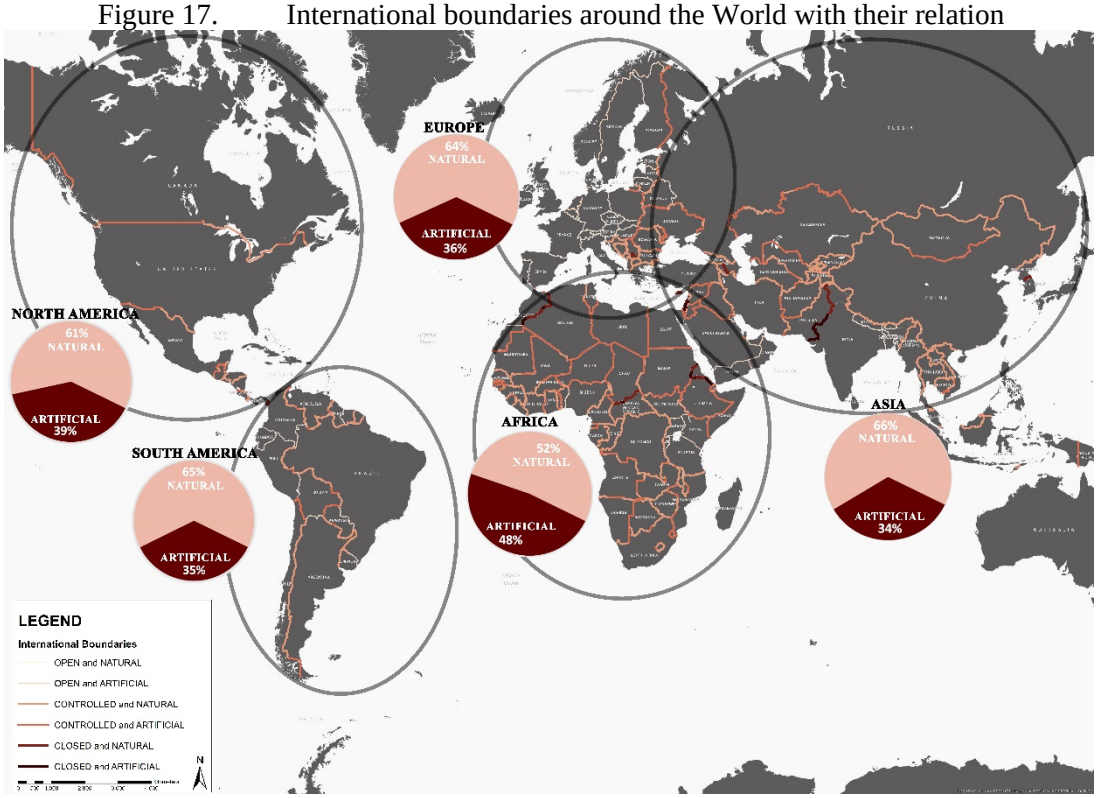


Figure 18. International boundaries around the World with their components

4.2. Distribution of the Paired Border Cities around the World

The current part of the research will focus on the paired border cities around the World, and their typologies are examined accordingly. In order to limit the number of the examples, the towns and cities which are over 25.000 in the population are selected for analysis (total population of two cities). The settlements under the population of 25.000 such as villages are hard to examine on account of their physical features and spatial problems. Although there are thousands of paired border cities and villages, with the limitation of population input, this study contains 152 paired border cities and towns for analysis by mapping (see: Figure 19). All these 152 paired border cities are given in the Appendix A and B with their boundary features, formations and their satellite images. While creating these typological approaches on paired border cities, Google Earth, Google Maps and Yandex Maps have been used to reveal the paired border cities on the international boundaries. All the international boundaries are search on these programs and the data of their features with the cities have been processed ArcGIS program. As a result of these mapping processes comprehensive typology of paired border cities which is revealed in Chapter 3 and shown on Table 8 is reorganized. 14 types of 18 type of paired border cities occur in today's World. 82 of the selected settlements are partitioned paired border cities while 36 of them are duplicated, and 34 of them are cross-border activity dependent.

Looking at the locational distribution of the paired border cities, most of the partitioned paired border cities are located in Europe, while there are no cross-border activity dependent cities in the continent. Duplicated paired border cities are more equally distributed among the continents. Cross-border activity dependent paired border cities are located in Asia, America, and Africa. As it is mentioned in Chapter III, this is the proof of the emergence of this types of cities; taking advantage of the border.

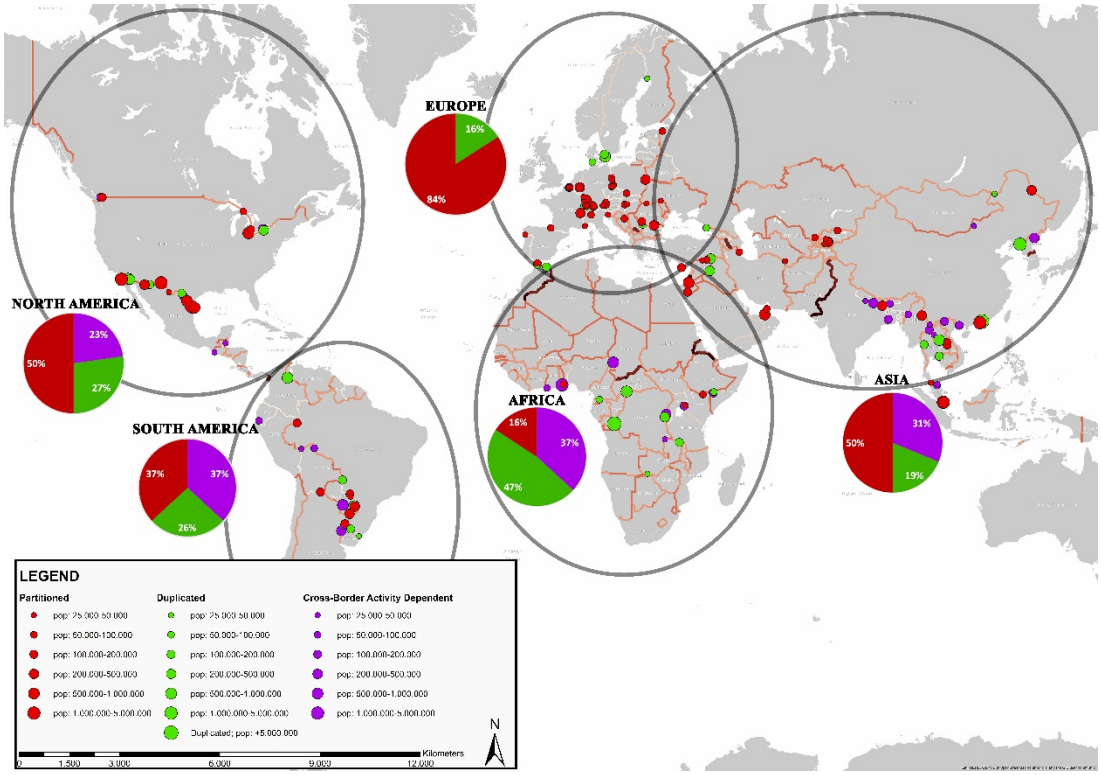


Figure 19. Distribution of the paired border cities around the World

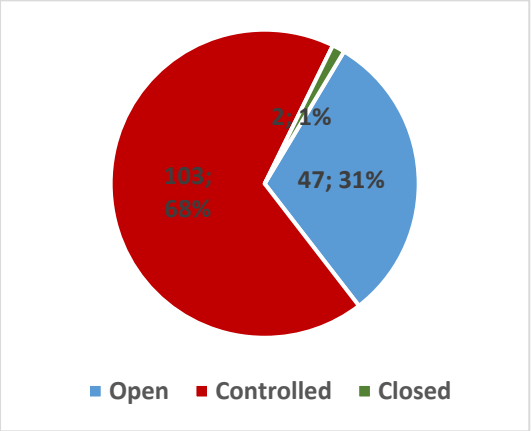
4.3. Comprehensive Typology of the Paired Border Cities

As it is discussed before, there are 14 types of paired border cities out of 152 cases in the World. In order to reveal their differences and similarities in socio-spatial problems 14 paired border cities have been selected. While selecting, it is noted that they have similar populations in range, giving more information about their spatiality along the boundary, allowing different relational circumstances, and being located in different continents of the World.

Concerning the figures, it can be argued that in Table 9, 103 out of 152 paired border cities are located in controlled boundaries and %74 of them are located within natural boundaries. These distributions affect the count of the cities of comprehensive typology.

As it is seen in Table 10, Type 7 is the most frequently specified paired border city. Following that, Type 1-8 and 9 are the most common typology specified in the World.

Table 9. Distribution of the paired border cities regarding boundary relations and boundary components



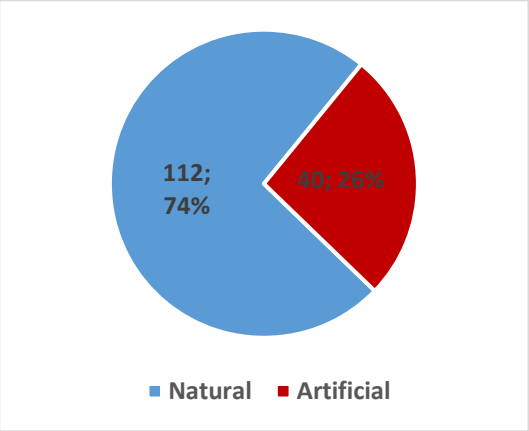


Table 10. Comprehensive typology of paired border cities based on selected categories

RELATIONS	COMPONENTS	PAIRED BORDER CITIES	TYPE	NUMBER OF CITIES
OPEN	NATURAL	Partitioned	Type 1	**23**
		Duplicated	Type 2	5
		Cross-Border Activity Dependent	Type 3	3
	ARTIFICIAL	Partitioned	Type 4	11
		Duplicated	Type 5	2
		Cross-Border Activity Dependent	Type 6	3
CONTROLLED	NATURAL	Partitioned	Type 7	**38**
		Duplicated	Type 8	**20**
		Cross-Border Activity Dependent	Type 9	**22**
	ARTIFICIAL	Partitioned	Type 10	8
		Duplicated	Type 11	9
		Cross-Border Activity Dependent	Type 12	6
CLOSED	NATURAL	Partitioned	Type 13	1
		Duplicated	Type 14	0
		Cross-Border Activity Dependent	Type 15	0
	ARTIFICIAL	Partitioned	Type 16	1
		Duplicated	Type 17	0
		Cross-Border Activity Dependent	Type 18	0

In Figure 20, the fourteen selected examples of the paired border cities are mapped out. These sampling cities are respectively from; Germany-Poland, Brazil-Uruguay, Ecuador-Peru, Germany-The Netherlands, Brazil-Uruguay, India-Bhutan, the U.S-

Canada, the U.S-Mexico, China-Vietnam, Spain-the U.K, Spain-Morocco, Kenya-Somali, TRNC-Cyprus, and Israel-Palestine. In the specification of the sampling cities, specific factors of analysis are introduced: urban networks, land-use patterns, and cross-border relations.

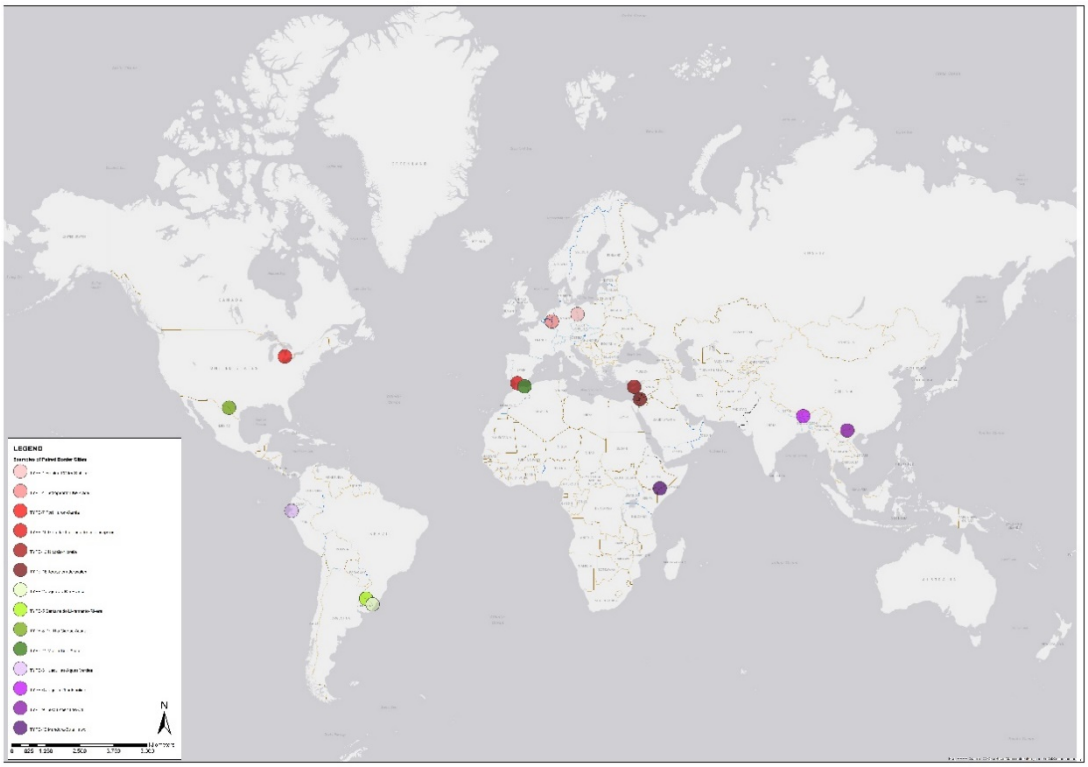


Figure 20. Location of the selected fourteen types of paired border cities

In Figure 21, the comparison of paired border cities is given. Within the framework in the second column, their urban networks are given to analyze the cities' internal and external connections. In the third column, land-use patterns of paired border cities are given. The land-use maps are aimed to give the subtle differences between the two paired cities in economic and social conditions. Finally, their cross-border relations are diagrammatized to indicate the structural relationships between the cities.

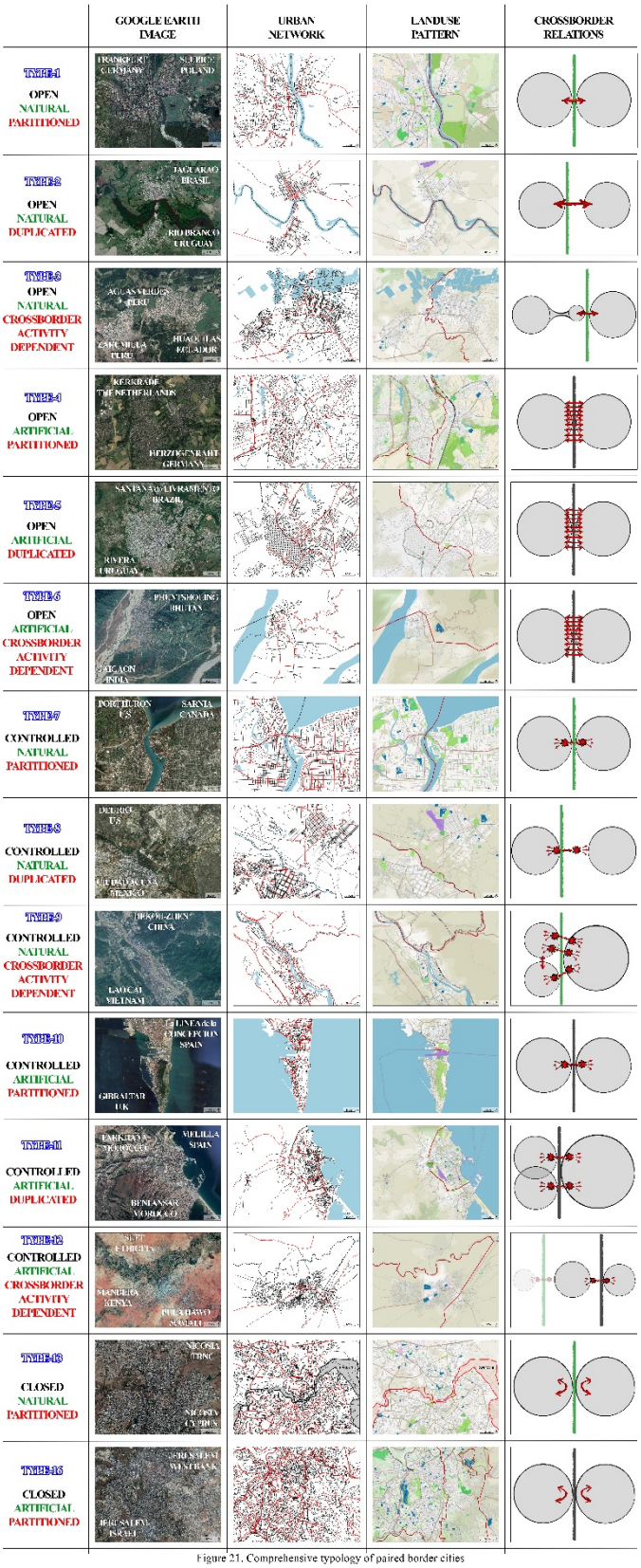


Figure 21. Comprehensive typology of paired border cities

To show these examples in details, the selected examples are examined in three groups. As it is seen in Table 11, Type-1 Type-2 and Type-3 are included in the table in comparison. These paired border cities have the same features, all of them are located in open and natural boundaries, and these characteristics provide those same problems or the same problematic features. Since they are located on open boundaries, while crossing to one city from another, there is not any border ports or any controlled points. On the other hand, even if the border is open, to cross the boundary, there is only one bridge in the settlement area. This shows that the natural elements on the boundary play a limited role as if they are the weak structural elements like a wall or wired fence. It could be argued that they perform as a sort of controlling element for border crossings. If they were a united city within a rule of one nation-state, probably there are some other alternatives.

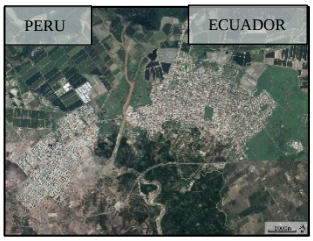
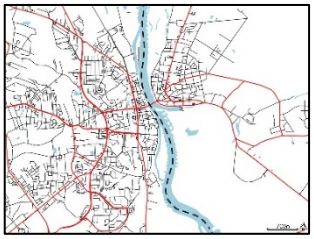
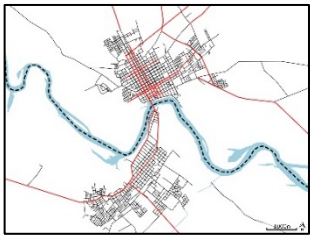
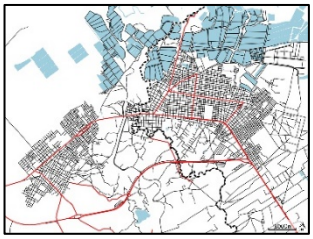
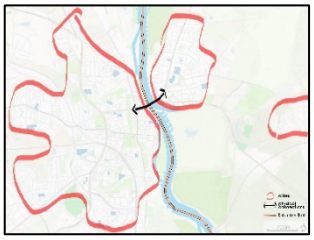
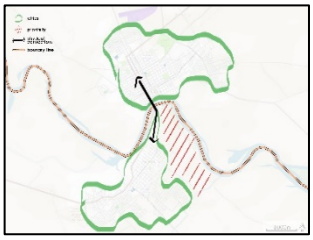
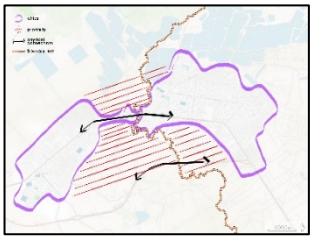
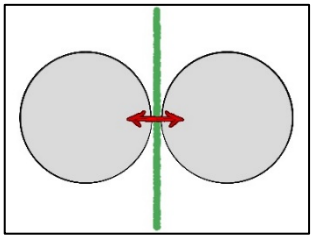
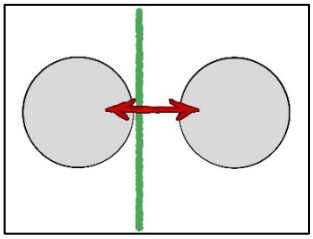
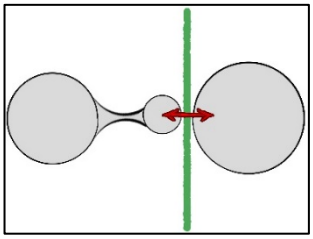
On the contrary, these are three different paired border cities having different features or problems because of their formation. Type-1 is a partitioned city between Germany and Poland. These two cities were a united city before World War II in the name of Frankfurt am Oder. After the War, the boundary was changed, and the east side of the river has been under the controlled of Poland. During the War two side of the city had been damaged and after the war, they were reconstructed separately. Because of that, along with the integrity of the city, the connections between two cities have also changed. There had been a tram line that was used in between two cities however nowadays only buses are used as a public transportation system. In addition to that, there is no connected railway line in between Frankfurt and Slubice since both cities have the same partitioned proximity of boundary although they are closed to each other.

In the Type-2, Jaguarao and Rio Grande border cities are exemplified for duplicated paired border cities. The city of Jaguarao in Brazil was born as a military town to keep the territory. After the demarcation, the Uruguay city of Rio Grande was established. The Rio Grande is the second city, and it is not located to the boundary as close as Jaguarao. The historical International Baron de Maua Bridge which connects two cities is the only connection element. Also, Rio Grande is more rural while Jaguarao is urban. This is one of the results of the economic and social differences of the

citizens. While there is a railway station in Rio Branco, there is no connection between two cities through public transportation.

Type-3 is the cross-border activity-dependent cities between Ecuador and Peru: Huaquillas and Aquas Verdes. They were established after the demarcation. Aquas Verdes, Peru emerged as the extension of the city Zarumilla. In this example, there is also one bridge to cross the river and the border inside the settlements. It can be seen in the land-use pattern map, Aquas Verdes is just here because of taking advantages of the border condition. This kind of establishment like Aquas Verdes are generally seen in cross-border activity dependent paired border cities. In the google earth image, it seems like Aquas Verdes is not the extension of Zarumilla, but the part of Huaquillas. This also means that the proximity of cites to the boundary is very high and they are almost attached to each other.

Table 11. Paired border cities with open and natural boundaries

	TYPE-1 OPEN-NATURAL PARTITIONED Frankfurt (Oder)/Germany-Slubice/Poland	TYPE-2 OPEN-NATURAL DUPLICATED Jaguarao/Brazil-Rio Branco/Uruguay	TYPE-3 OPEN-NATURAL CROSS-BORDER ACTIVITY DEPENDENT Huaquillas/Ecuador-Aquas Verdes/Peru
Google Earth Image			
Urban Network			
Landuse Pattern			
Cross-Border Relations			

In Table 12, comparison of Type 4-5 and Type 6 is given. These paired border cities have the same features. All of them are located in open and artificial boundaries, and these characteristics provide them the similar problems or the same problematic features. Because they are located on open boundaries, in crossing the border between cities, there is not any border ports or any controlled points. The boundary is defined by a road, or the boundary line is getting through inside the buildings in all these three examples. That is why, while crossing one city to another, there is not any limitation.

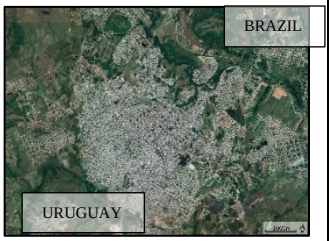
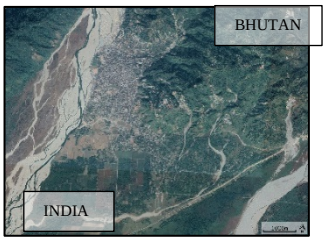
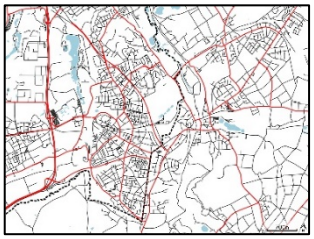
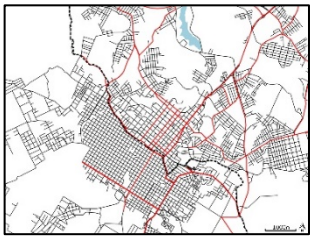
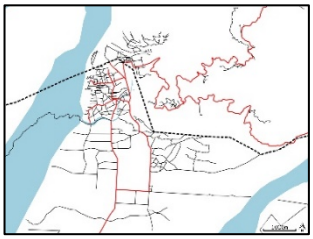
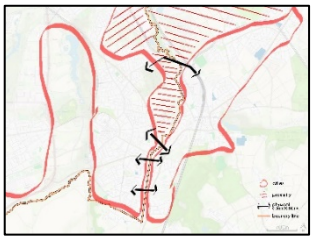
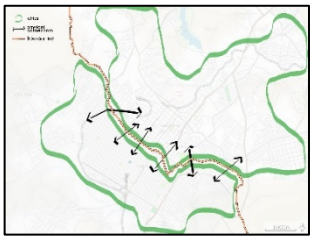
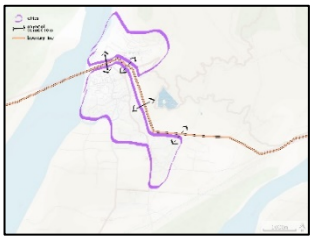
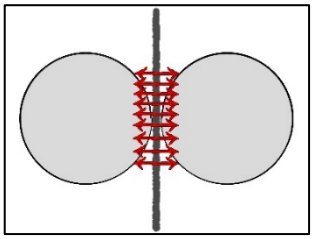
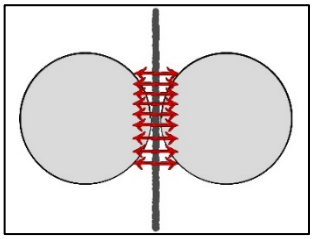
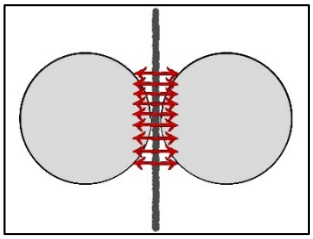
Therefore, two sides of the boundary are seen as a whole. Even though the artificial elements on the open boundaries have no roles in limitation, the settlement pattern of two cities or urban structure are the main factors of differentiation.

In this framework, Type 4 is a partitioned city located between Germany and The Netherlands. Unlike the Type 1, the city of Herzogenrath was divided much earlier, at the beginning of the 19th century. The developments of two cities occurred in two different countries for years. Today, the boundary which is through the street tends to serve as a unifying element. Now, these two cities use the same public institutions. There are some initiatives for the foundations of one municipality. They are next to each other and close to the boundary. Even if both are partitioned on the open boundary, the main difference between Type 1 and 4 is about connections. In the Type-4, both sides of the boundary are connected to each other with urban networks, public transportation systems, and public organizations.

Type-5 is duplicated. Santana do Livramente is a city in Brazil and its counterpart, Rivera, is established after the demarcation in Uruguay. There is no any restriction elements or no border port, on the contrary, the boundary which is through the streets is a path which connects not separates. Unlike Type-2 there is a railway which connects two cities and two nation-states, and also connects the other cities in the countries. As it is seen in Table 12, these two cities look like a united city. The Rivera were established later. Unlike Type-2 which is also located between Brazil and Uruguay, these two cities are very significant examples of 'binational cities'.

Type-6 is a cross-border activity dependent city between India and Bhutan; Jaigaon and Phuntsholing. They were established after the demarcation. In this example, the boundary does not only correspond to the street, but also to the buildings, parks and other urban areas. These two cities look like united without any boundary line, as well. Their proximity to the boundary and each other is very high as if they are like one in another. The difference between Type-3 and Type-6 is about the formation of the cities and the cross-border relations.

Table 12. Paired border cities with open and artificial boundaries

	TYPE-4 OPEN-ARTIFICIAL PARTITIONED Herzogenrath/Germany- Kerkrade/The Netherlands	TYPE-5 OPEN-ARTIFICIAL DUPLICATED Santana do Livramento/Brazil- Rivera/Uruguay	TYPE-6 OPEN-ARTIFICIAL CROSS-BORDER ACTIVITY DEPENDENT Jaigaon/India- Phuntsholing/Bhutan
Google Earth Image			
Urban Network			
Landuse Pattern			
Cross-Border Relations			

In Table 13, comparison of Type 7-8 and Type-9 are indicated. These paired border cities are located in controlled and natural boundaries, and these characteristics provide those same problematic features within different contexts. Different from the open boundaries within these cities border ports occur. While crossing the boundary, there are controlled or checkpoints. In addition to this feature, Type-7, 8 and 9 are located on through the river as the natural boundary. On the boundary river, the border ports are located to limit and stop the crossing activities both in the movement of people and goods.

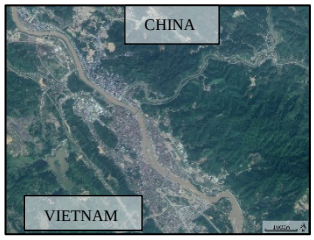
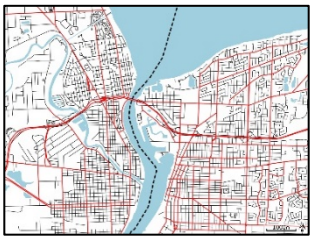
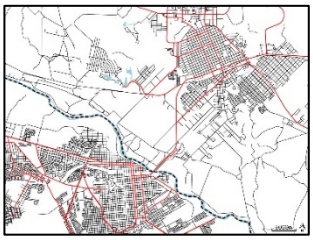
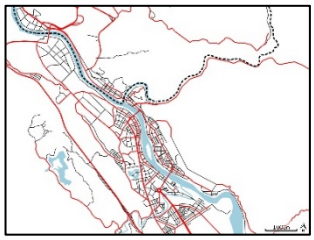
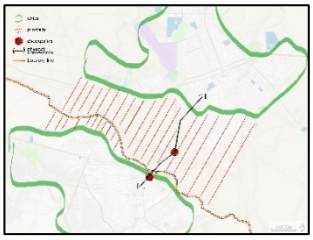
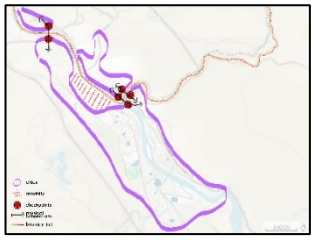
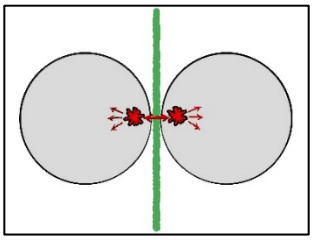
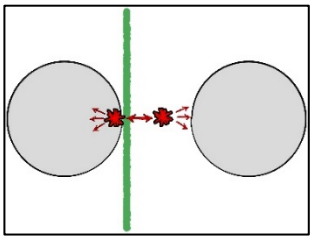
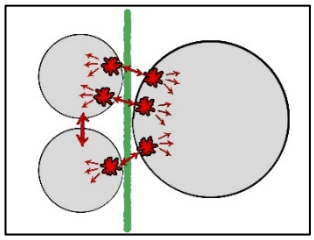
Type-7 is a partitioned city where two settlements are located in the U.S and Canada border. The history of cities as a united city dates back earlier. After the U.S-Canada demarcation, the river between these two split up cities has become a fortification. There are Bluewater Bridge which is the only connection between the city of Port Huron and the city of Sarnia. At the end of the bridge, on both sides, there are border ports and checkpoints. After crossing the river, to enter the city, the movement has to be checked in border ports. Considering the urban networks and land-use patterns, it can be argued that these two cities which are divided by a river, seem united. However, the existence of the checkpoints, their locations and, the limited connection between two cities make them separated socially, spatially and economically.

Type-8 is an example of duplicated paired border cities which are located on U.S-Mexico border: the city of Del Rio and the city of Ciudad Acuna. These two cities are established near the river in the Rio Grande. The first settlements were seen in the south side of the river, now in Mexican territory. Up until the American Civil War, the city of Del Rio had not existed, yet. After demarcation, the counterpart of the Ciudad Acuna has been established in the U.S side. There is again only one bridge to connect the two cities; Del Rio-Ciudad Acuna International Bridge. At the end of the bridge, on the Mexico side, there is a border port. In the U.S, border port is located a little further inside the U.S. Del Rio has been settled not next to the boundary or Ciudad Acuna, it is located inside through the border. As it is seen in Table 13, the differences in built fabrics and the land-use patterns show the differences in socio-economic patterns between two sides of the boundary. More developed one in which is located more powerful nation-state, economically located far from the boundary. The reason why is to prevent smuggling and any other border advantages.

In Type-9, an example of cross-border activity dependent paired border city can be examined. These cities are located on the China-Vietnam border. Similar to the Type-3 in this example on the China side there are two settlements: Hakou and Hakou-Zhen. However, unlike the Type-3 one of them is not an extension from other. Due to the geographical reasons, two close cities occurred in China side. Unlike all the other natural boundary examples, there are lots of bridges to connect both sides of the boundary over the Red and Nanxi River. Consequently, there are many controlled

points at two sides of the boundary. However, in this example, crossing the border is more accessible than the U.S-Mexico border or the U.S-Canada border owing to several bridges and border ports located.

Table 13. Paired border cities with controlled and natural boundaries

	TYPE-7 CONTROLLED-NATURAL PARTITIONED Port Huron/U.S-Sarnia/Canada	**TYPE-8 CONTROLLED-NATURAL DUPLICATED Del Rio/U.S-Ciudad Acuna/Mexico**	**TYPE-9 CONTROLLED-NATURAL CROSS-BORDER ACTIVITY DEPENDENT Hekou-Zhen/China-Lao Cai/Vietnam**
Google Earth Image			
Urban Network			
Landuse Pattern			
Cross-Border Relations			

In Table 14, comparison of Type 10-11 and Type-12 is given. These paired border cities are located in the controlled and artificial boundaries. In these examples, there are not any natural limitations like rivers. Thus, physically, crossing the boundary has

to be more comfortable. On the contrary, in this types, due to lack of natural restrictions, artificial elements like walls, fences or any other fortification components do exist. Therefore, with the artificial components, the border ports are located to limit the crossing movement of people and goods.

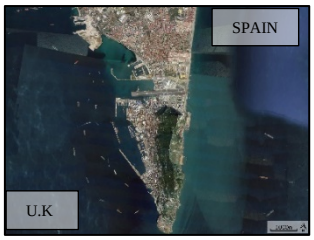
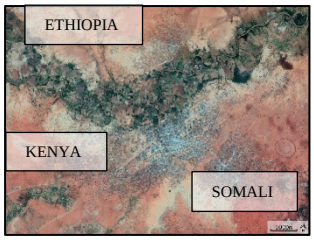
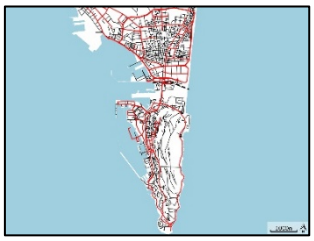
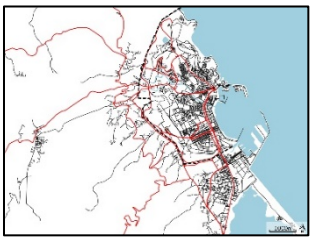
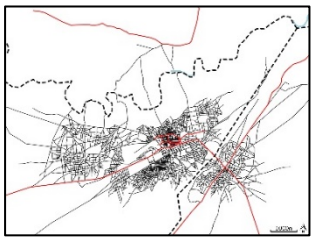
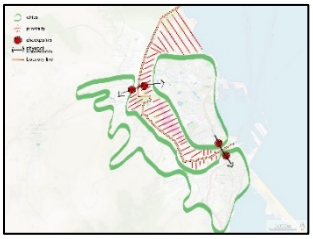
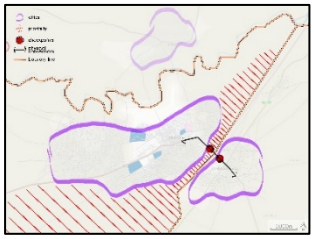
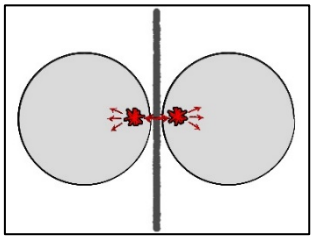
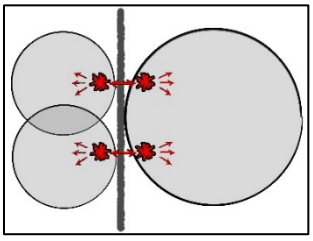
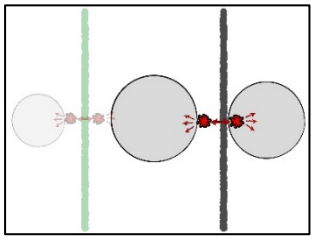
Type-10 is a partitioned paired border city, and Type-11 is a duplicated paired border city. However, these two examples have a standard feature. Both of them are autonomous cities. In Type-10, Gibraltar is an independent city located on the south coast of Spain under the rule of the British Government. Due to the importance of straits of Gibraltar, this region has always been attractive for all states. Under the Gibraltar constitution of 2006, the city governs its affairs, and the city is separated from Spanish part: the city of La Linea de la Concepcion. Since Gibraltar is located on a peninsula, the boundary is almost 1222 meters, and there are artificial fortification components. Both sides of the boundary have one border port to cross from Spain to the U.K. On the opposite side of the straits of Gibraltar; there is Ceuta, a Spanish autonomous city in Morocco. These two cities control the straits of Gibraltar.

Melilla is an also autonomous city, which is Spanish, located on the north coast of Africa in Morocco. In the example of Type-11 Melilla and its doubled city of Beni Ansar are given. After the boundary of the city of Melilla had been determined, the city of Beni Ansar was established next to Melilla. Then the rural areas have started to emerge around the city of Melilla. Due to this surrounding developments, there are walls and fences around the Melilla. Two border ports are located on the boundary between Spain and Morocco. One of them is a south bank of the boundary between Melilla and Beni Ansar while other is located on the west side of the Melilla between the city and the rural settlements. In African cities, the built fabric is economically less developed. The city of Melilla is located in Africa, while the development of built fabric is initiated by the Spanish. In Table 14, via both satellite images and the land-use patterns, the socio-economic differences can be observed.

Type-12 is an example of cross-border activity dependent paired border city from southeast of Africa (Mandera and Beled Hawo). These cities are located on the Kenya-Somali border. The city of Mandera is located in Kenya’s boundary both with Somali

and Ethiopia. On the Ethiopia side, there is a rural settlement with about 100-200 populations. In this example, there is like buffer zone of agricultural lands between the city of Mandera and the boundary. On the contrary, Beled Hawo is located next to the boundary. Similar to the other controlled boundaries, there are also checkpoints. To cross from one city to another, first, border ports have to be crossed. Moreover, although both countries are not well developed economically, in the side of Kenya, there are more opportunities, economically, seen on the map of the land-use pattern (see Table 14).

Table 14. Paired border cities with controlled and artificial boundaries

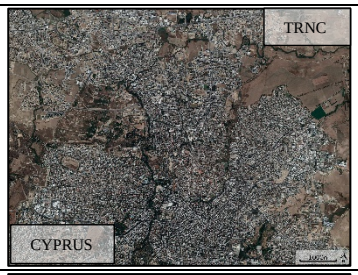
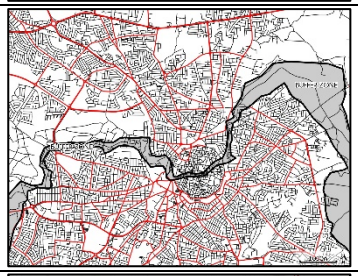
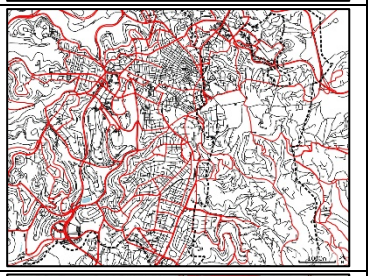
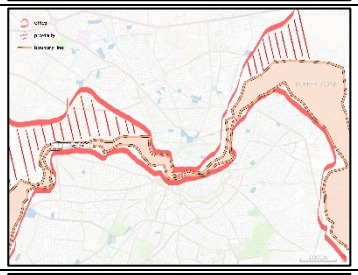
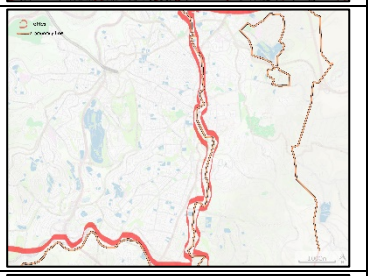
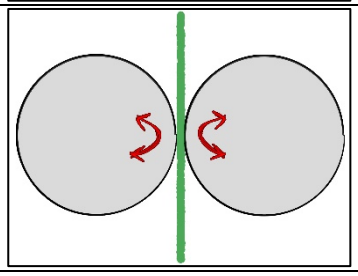
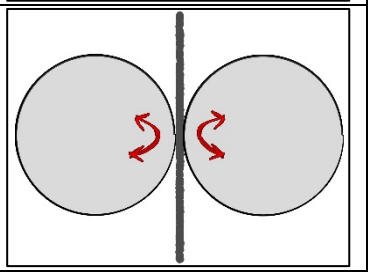
	TYPE-10 CONTROLLED-ARTIFICIAL PARTITIONED Gibraltar/U.k-La Linea de la Concepcion/Spain	TYPE-11 CONTROLLED-ARTIFICIAL DUPLICATED Melilla/Spain-Beni Ansar-Farkhana/Morocco	TYPE-12 CONTROLLED-ARTIFICIAL CROSS-BORDER ACTIVITY DEPENDENT Mandera/Kenya-Beled Hawo/Somali
Google Earth Image			
Urban Network			
Landuse Pattern			
Cross-Border Relations			

In Table 15, two partitioned cities are given to compare. Both are located on closed boundaries, and Type-13 is on the natural boundary while Type-16 is on the artificial boundary. Actually, in both examples, there are border ports which let the crossing the border. However, in both examples, there are different conditions regarding crossing the boundary. In Cyprus, if a Turkish citizen visits the Turkish side of Cyprus with his/her passport, then he/she are not allowed to Greece.

The history of the city of Nicosia dates back to ancient times. During several years lots of different nations had lived together in Nicosia. In the 19th and 20th centuries, the dominant population was Turkish, Greek and British. After 14 years of the republic in Cyprus, the island divided into two: north and south side. After the demarcation, the city split up in the middle of the center, and Turkish people have started to live in Northside, while Greek people in Southside. Now, there are buffer zone and wall between two sides of Cyprus to separate and protect the city from conflict.

The city of Jerusalem is also a partitioned city which is divided by a wall. In this example, the division was made according to the religion not based on race or nations. The conflict between Muslims and Jewish governments caused to split up the city. The fundamental problem which can be seen in the land-use pattern map Israel side has more advantages by comparison Palestine side. Economic and sociological differences affect the urban development and life qualities.

Table 15. Paired border cities with closed boundaries

	TYPE-13 CLOSED-NATURAL PARTITIONED Nicosia/CYPRUS	TYPE-16 CLOSED-ARTIFICIAL PARTITIONED Jerusalem/Israel-Palestine
Google Earth Image		
Urban Network		
Landuse Pattern		
Cross-Border Relations		

4.4. Concluding Remarks

It response or not to the intrinsic relationship between the main components of the paired border cities on the context of the boundary, border or frontier, it provides a kind of original interpretation of the basic concepts of the contexts. This typological approaches on paired border cities and their spatial characteristics with their boundary features have been a base for the following chapters. In the following part of the study, the selected projects which focus on paired border cities and the border conditions will be critically reviewed in detailed considering their typological features. Ultimately, a strategical framework of the urbanistic interventions of the border condition will be suggested out of this comprehensive review.

CHAPTER 5

URBANISTIC PERSPECTIVES ON THE PROBLEMATIQUE OF BORDER CONDITION: A CRITICAL REVIEW

This chapter focuses on the cross-border projects on the boundary, border, and frontier on building/mezzo, city, and regional scales. 45 projects which are selected regarding their aims, strategies and locations are reviewed regarding their re-interpretation of the cross-border relations to understand the main emphasizes on the border condition by suggesting particular design strategies and interventions.

As it is mentioned before, the notion of the border with its connotations (i.e., classifications of the international boundaries, and border cities) have not been a focused subject of research in urbanisms as much as in other fields like sociology and politics. On the contrary, there are lots of projects (competition projects, city planning or architecture students' studio projects, idea projects, implementation projects) which are studied on international boundaries, cross-border cities, and border regions. Although these projects are aimed to respond to the fundamental problems on the border condition, their performance to tackle the issue properly is a question. In order to characterize the design approaches in urban projects, the projects will be reviewed, and then the design strategies and interventions are examined.

5.1. Selected Design Projects

In this part of the study, the selected projects are examined in three groups which are based on where the design interventions take place. Every project is perused in specific contexts, boundary, border or frontier. While 30 of the 45 projects are suggested on the boundary, 8 of them are on the border, and 7 of them are on the frontier.

5.1.1. Designing the Boundary

The dominant design context of the reviewed projects is generally the boundary. While analyzing the projects, it is clearly seen that the design interventions on the boundary between two nation-states or paired border cities are through the line or focused at a point on the line. To understand the main problems and aims of the projects, proposed design strategies, design tactics, and interventions of the projects will be analyzed, and then 30 projects briefly categorized in these respects.

5.1.1.1. Jerusalem the Annex to Geneva Record Plan by SYAY (2010a)

The first example, 'Jerusalem Annex to the Geneva Record: From "Jerusalem" to "Yerushalayim" and "Al-Quds" | A planning guide for peace', is designed by SAYA Group in Jerusalem (2010a). SAYA's annex to the Geneva Accord proposes planning, design, and urban strategy measures to ensure the political resolutions are implemented for the benefit of both sides of the city. With these strategies, it focuses on the planning and design challenges that will arise from the delineation of a border through Jerusalem (SAYA, 2010a. p. 111). The main challenge of this project is to redefine the subtle condition of separation and connectivity. Within the framework of separation and connectivity SAYA's annex approach for the division of Jerusalem from the urban and architectural point of view. There are five selected urban areas in this project: French Hill, Road 60, Old City, Ben Hinnom Valley, and Abu Tor in Jerusalem (Israel-Palestine) (see: Figure 22). Design solutions for these areas are proposed for a sensitive separation with a viable connection between the two sides of the Jerusalem. Before forming the solution on the five different urban areas, SAYA (2010a) made some analysis on the Jerusalem border-crossing issue and upper scale demarcation decisions for two sides of the border in this project (see: Figure 23). Although the plan makes an extensive and comprehensive assessment, the reason why this project is evaluated on the boundary context is the peculiarity of the design strategies and the interventions at the building or mezzo scales for the five selected areas.

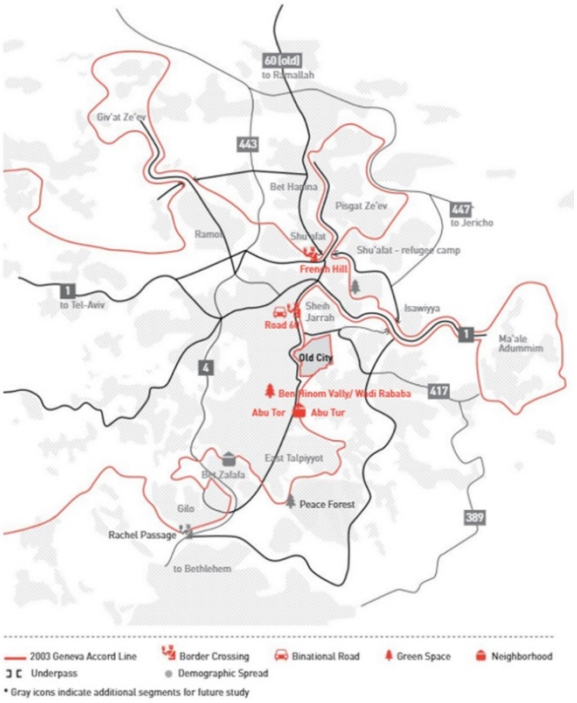


Figure 22. Selected urban areas on the boundary and border between Israel and State of Palestine (Source: SAYA, 2010a, p. 118)

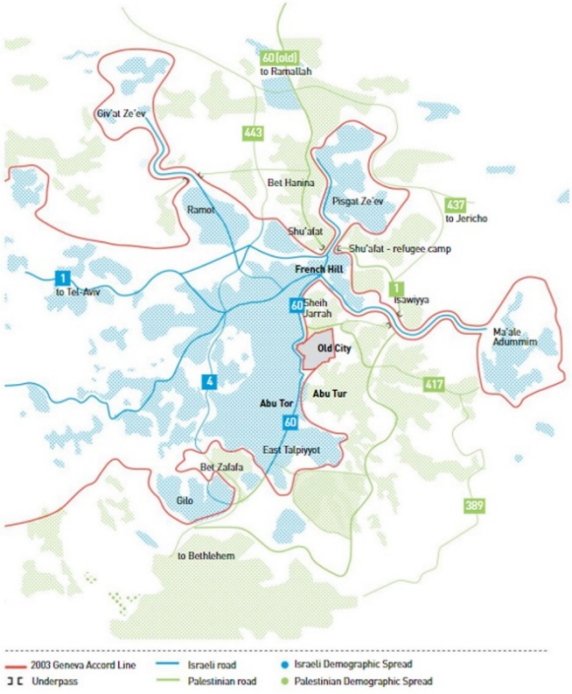


Figure 23. General view of the Jerusalem as a border city (Source: SAYA, 2010a, p. 116)

French Hill located in Northern Jerusalem is the first problematic area for this plan. In the project, French Hill is considered as a major junction between two cities. The project focuses on the continuity of the movement between two sides of the border.

To create a sensitive separation with a viable connection, in addition to major entrance and exit points, the strategy for this area is to explore a significant pedestrian and vehicle border crossing facility. After making urban analysis, it proposed the road and light rail infrastructure (see: Figure 24-25).

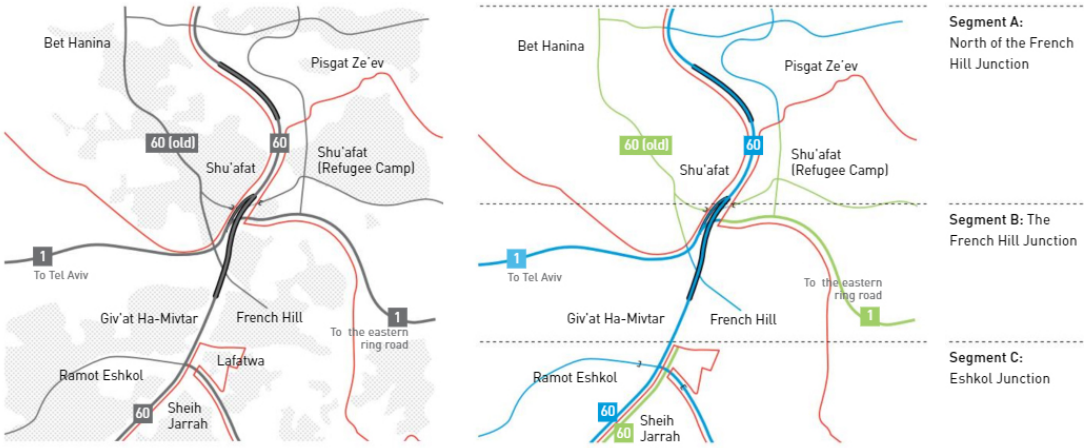


Figure 24. Existing route of French Hill (left), and the proposed plan for the road connections (right) (Source: SAYA, 2010a, pp. 126-127)

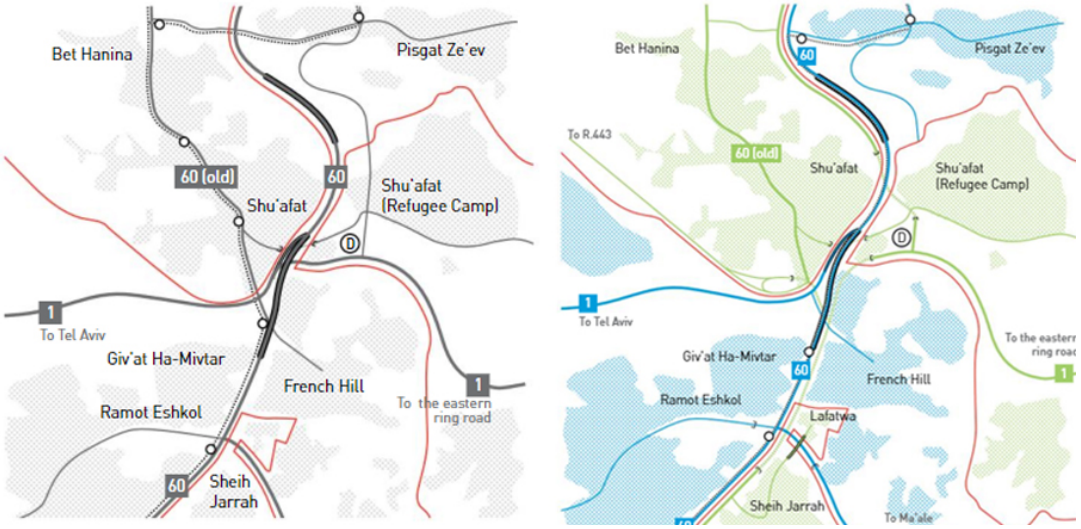


Figure 25. Existing light rail connections in French Hill (left), and the proposed plan for the same context (right) (Source: SAYA, 2010a, pp. 132-133)

For the border-crossing facility in the plan, six different alternatives are analyzed to find the most suitable location regarding, urban fabric, transportation, security, economy and tourism, and visual and symbolic assets. Regarding these criteria, the recommended option provides the best solution for the border-crossing facility. The most critical intervention on this facility is to connect the citizens between Yerushalayim and Al-Quds with several public usages along and across the border.

The fundamental principle behind the facility is the creation of two separate but same terminals, on both sides of the border. Each terminal is accessible via transportation systems, and they provide a public space with commercial spaces as an entrance to the terminal (see: Figure 26) (SAYA, 2010a).

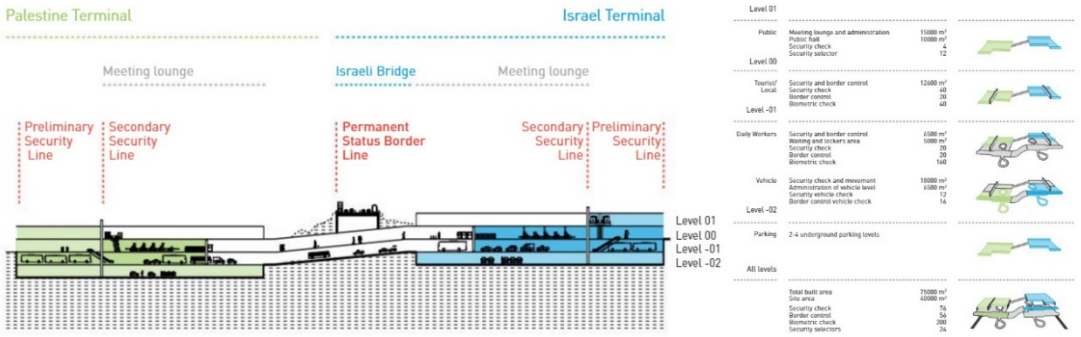


Figure 26. Section through the crossing facility (left), programmatic scheme (right) (Source: SAYA, 2010a. pp. 139-141)

The second urban area along the boundary is Road 60. The road goes through the boundary. It is considered as a binational road and backbone for infrastructure. Road 60 is the only road as a primary route and serving for both sides. Due to this function of the road, the separation and connection challenges are very significant design objections to overcome. For this area, the plan recommends three-parts (see: Figure 27:

- *Creating a binational road which meets the different needs of both sides of the road.*
- *Connecting the transportation and infrastructure systems, and border facilities to surrounding urban areas.*
- *Establishing the barriers for the road on both sides* (SAYA, 2010a. pp. 143-145).

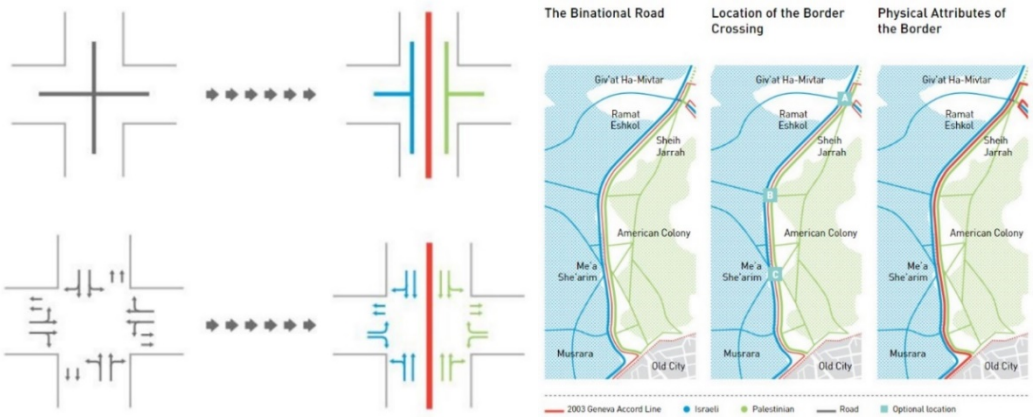


Figure 27. From one system to two of the binational road (left), locations of three challenges (binational road, border-crossing points, and the barriers) along the Road 60 (right) (Source: SAYA, 2010a. pp. 146-147)

The third problematic issue of the plan is 'Old City'. The project provides a transformation of the Old City into an area with special arrangements for the border management and crossing facilities (see: Figure 28). The main challenges of this area are as follows:

- *Preserving the role of the Old City as a connection between the two sides, and developing it as a major cultural intersection between the two future capitals.*
- *Ensuring accessibility to the holy sites for members of all three religions.*
- *Locating and integrating the proposed border apparatus into the landscape of this historical and religious space with minimal interference to its appearance and character* (SAYA, 2010a. p. 161).

The solutions are exemplified in two cases within this plan: Jaffa Gate Crossing and Dung Gate Crossing. The former one is the main gate of the Old City, and the gate functions as a bridge between cultures, religions, and nations. The proposed plan of this gate has to let the flow of people and goods with minimal restrictions (see: Figure 29). The latter one is planned to provide additional pedestrian access (see: Figure 29)

Figure 28. Old city gates – upon the delineation of a permanent status agreement (Source: SAYA, 2010a. p. 160)

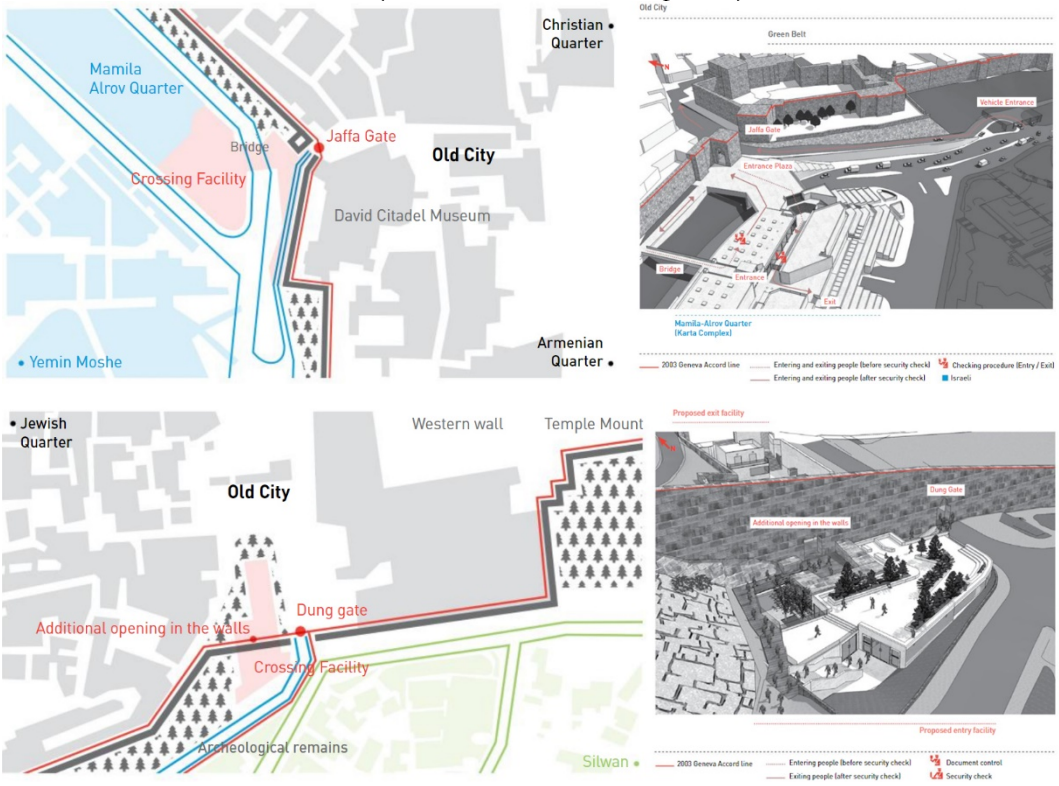


Figure 29. Proposed border crossing facility at Jaffa Gate (above) at Dung Gate (below) (Source: SYA, 2010a. pp. 163-164, 169-170)

Another planning challenge addresses the separation within the historical landscape of Ben-Hinom Valley. The critical challenges of the area are preserving the valley as a green space, blending the division barrier in the valley, and maintaining the perceptual and visual wholeness of the valley. The project proposes a path that creates a natural crossing border area (see: Figure 30) (SAYA, 2010a. pp. 173-177).

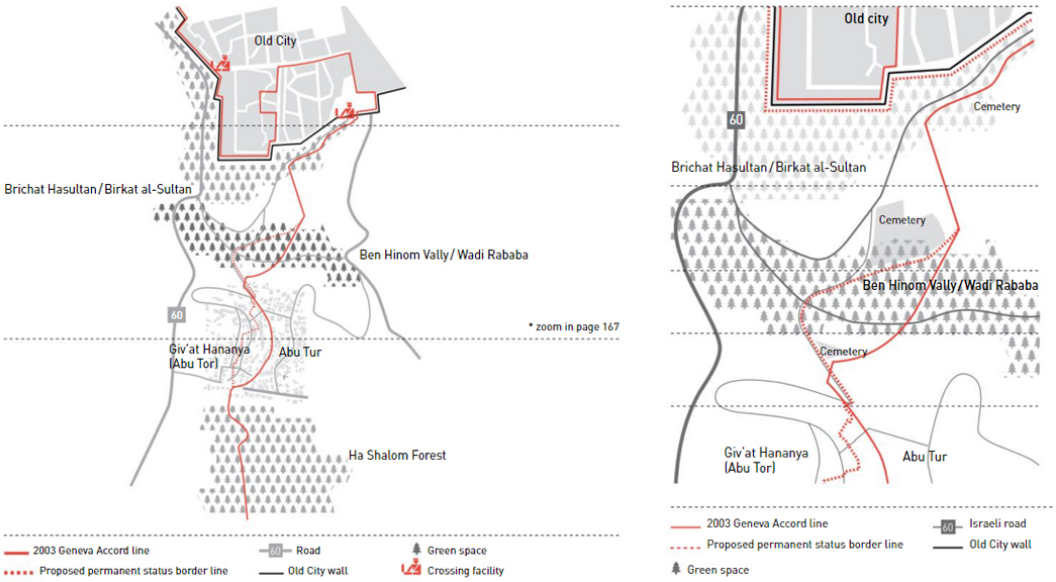


Figure 30. A chain of green spaces along the border (left), the proposed route of the order (right) (Source: SAYA, 2010a. pp. 174, 177)

The last problematic urban area of the project is Abu Tor, a mixed neighborhood. It is a vast built-up area, and the 2003 Geneva Accord line is getting through the neighborhood. Planning objectives for this area are creating a sensible border path with a sensitive form for the barrier and establishing planning guidelines for implementing separation and creating connections within the neighborhood. The plan creates an open space in the built area along the proposed borderline (see: Figure 31). As it is seen in Figure 32, border gardens for open spaces along the border is the first planning guidelines. Moreover, the plan provides a shared public building along the line for options for shared usages. Finally, local border crossing areas for emergency or special use is recommended in this mixed neighborhood to create both separation and connection (SAYA, 2010a. pp. 179-189).

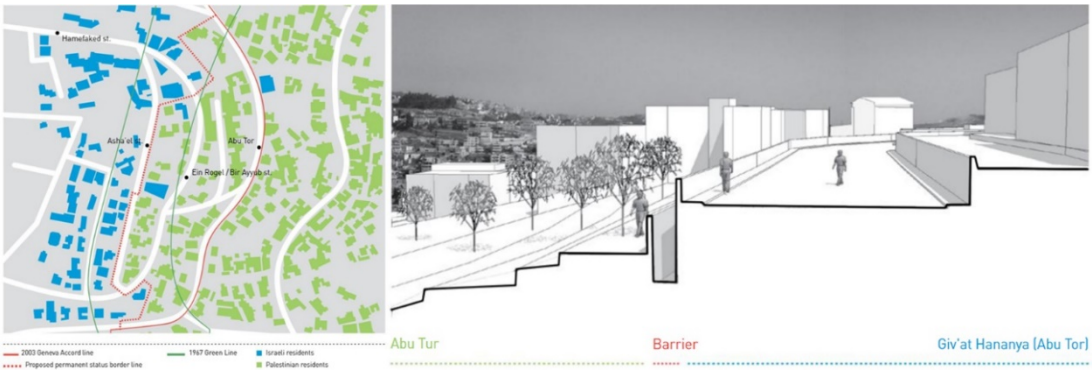


Figure 31. Current demographic spread (January 2008) and the proposed border route (left), proposed open space in the built area (right) (Source: SAYA, 2010a. pp. 180, 185)

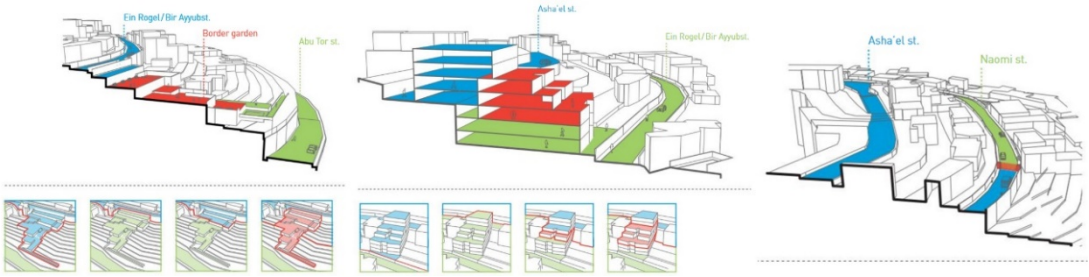


Figure 32. Border garden (left) shared public building (middle) local border crossing (right) (Source: SAYA, 2010a. pp. 187-189)

This project is the most comprehensive one in the context of the boundary. Due to its comprehensive analyses, creating alternatives for all segments, and considering policymakers with the public, this project is a very successful example regarding holistic view. However, all the design interventions and objections cover just the line segment along the boundary or focal point of the border-crossing facilities. If the interventions contained the relation with surroundings, as well as analyses, and the design approaches were also created on surroundings, more prosperous and comprehensive solutions would have been obtained. Furthermore, the socio-political dimension of the project is relatively weaker compared to the spatial analysis. Another strength of the project is that the plan proposes realistic solutions for current spatial and urbanistic problems. That is why; the design interventions can be performed on a paired border to deal with restrictions, conflicts, and border ports.

5.1.1.2. *Two Cities One Hearth* by Vilma Autio, Maija Paryiainen, and Hanna Kuiyalainen (2017)

The design site of the *Embrace the Border Competition* which held in Finland (2017) is between the border of Tornio in Finland and Haparanda in Sweden. These two cities are mentioned as twin cities representing the Nordic spirit by acting as a gateway to the Arctic. The competition aims to find design solutions to connect the project site to both cities which are developing their city centers to become one commercial and functional entity. The competitors are asked to propose useful ideas for the area such as buildings for travel, recreational uses, and housing (Europan.fi, 2017).

The winner project is 'Two Cities One Heart' which is proposed by Vilma Autio, Maija Parviainen, and Hanna Kuivalainen. They aim to support this unique unity while creating one active heart for the twin city. To reach the aim of the plan, the project team focuses on the main three elements; *loop*, *productive boulevard* and *park* (see: Figure 33).

The winner project proposes to stitch the urban fabric with a distinctive route, the Tornio-Haparanda Loop. Along the loop, commercial, production and recreation facilities meet. All the citizens on both sides of the border and all the visitors are connected to this new pedestrian pathway and each other (see: Figure 34).

Secondly, the project transforms the route E4 into a connecting artery - a productive boulevard. The Boulevard which is presented as an urban fabric connects two sides of the border with ample space for pedestrians and cyclists (Europan.fi, 2017).

Finally, the proposed plan creates the Rajapuisto Park which is an active park remains an arctic void defined by the urban structure. The park is located on the border between Finland and Sweden where all the neighborhoods meet each other.

In this winner project, when all three elements combined, the border gives an opportunity for commerce, production, recreation, tourism, and connection. As claimed that in the words of the winner team: *"From two cities separated by the border to a twin city with one heart!"*(Europan.fi, 2017).

Figure 33. Conceptual diagrams describing the main intention of the design intervention based on connectivity (Source: Europan.fi, 2017)

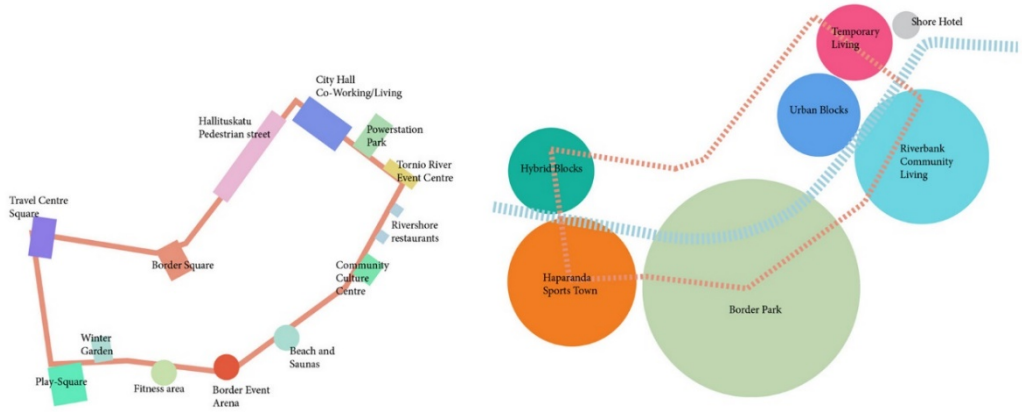


Figure 34. Conceptual diagrams describing the 'Loop' as design structure (Source: Europan.fi, 2017)

Besides their critical interventions and clear design approach, if the project is to be reviewed from a critical point of view, as it is seen in Figure 35, the project only focuses on the one essential node of the boundary due to the restricted field of the competition. However, it could be associated with both the urban areas of the Tornio and Haparanda. If the relationship between the paired border cities and 'the Loop, Productive Boulevard and the Park' was studied in a more comprehensive manner along with the interventions of connecting urban areas, the proposed plan would have been more inclusionary. In fact, the study area is located on open boundaries, and the border does not contain the difficulties for crossing the boundaries like checkpoints, restrictive physical elements or border ports. Therefore, the area is more appropriate to design to link two cities as a united city, and the analyses and the interventions would be more systematic and problem-solving for the area of the gateway to the Arctic.

Figure 35. Plan view of the project (above), axonometric view of the design proposal (below) (Source: Europan.fi, 2017)

In order to get an overview of the projects on the boundary, in 0, 30 projects are briefly described under the following sectional titles: the title, the author, year, area, context, and theme of the projects with proposed design strategies and tactics.

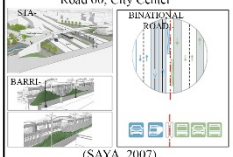
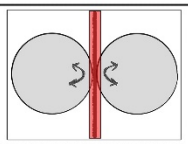
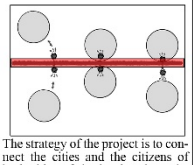
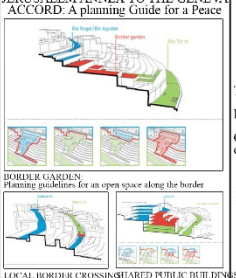
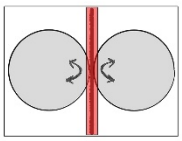
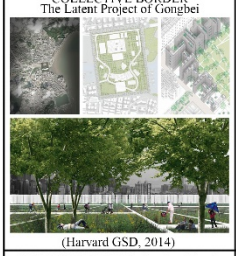
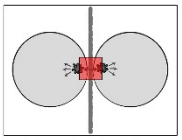
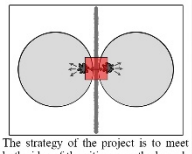
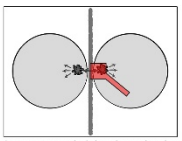
In the context of the boundary, most of the projects are addressed the closed or controlled boundaries which are hard to cross instead of open or more accessible crossing borders. The location choice of the projects draws attention either at the control points of the paired border cities or along the boundary between these two cities or the boundary between the two countries.

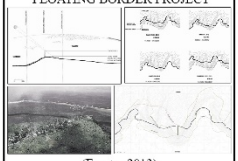
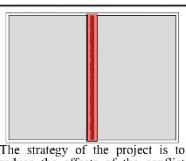
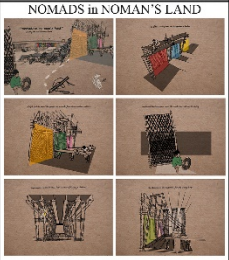
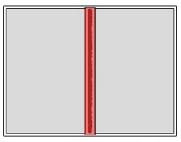
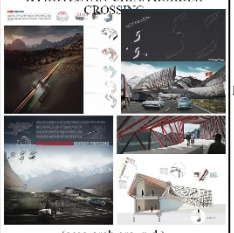
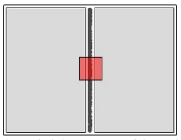
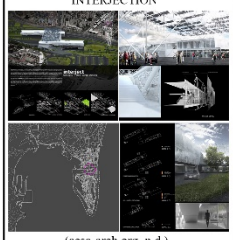
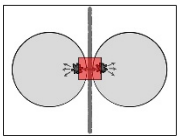
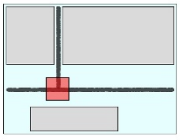
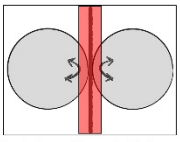
There are four main problematic issues which the projects deal with. First one is separative effects of artificial boundary elements between the paired border cities like walls or fences. Second problem is buffer zones which are split up the two cities with large spaces. Third one is nonfunctional border ports and their problems of integration with cities. The last main problematic issue is the whole boundary line which are not create any sharing, open, public spaces between two states.

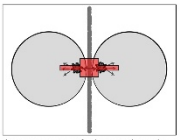
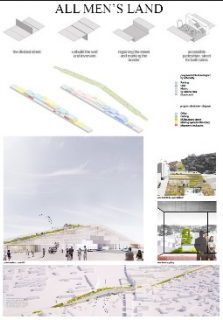
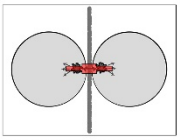
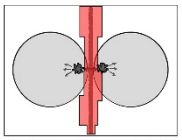
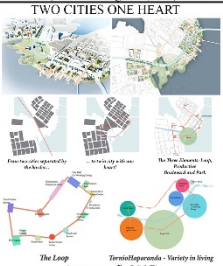
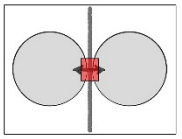
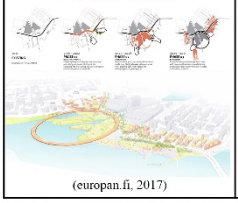
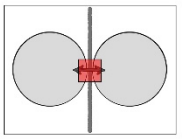
Moreover, projects are basically categorized into two groups according to the types of intervention. The proposals generate **focal points** on the boundary for crossing facilities or **linear interventions** along the boundary. Design interventions attract the attention with either on the checkpoints and their surrounding areas, or the production, recreation or integration spaces along the no man's land between the two countries.

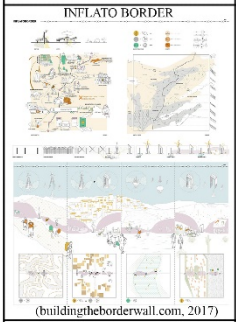
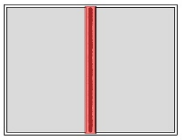
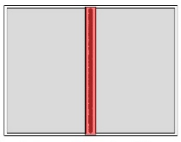
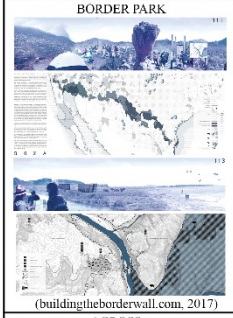
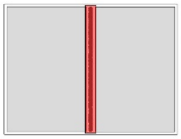
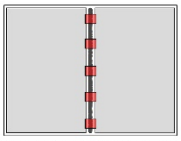
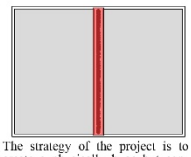
The common intention of the projects is to create more accessible and shared spaces on the boundary. Due to the controlled or closed boundaries, the projects are generally proposed open, mixed structures to improve the interaction of the citizens on both sides. The most problematic issue of these intentions is that the projects ignore the current political, social or illegal circumstances between the two states. The spatial solutions has to be cover all the dimensions of the border conditions with their physical features.

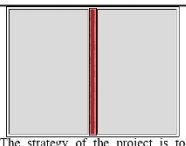
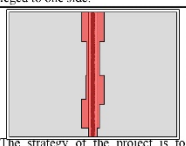
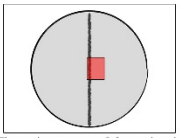
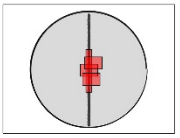
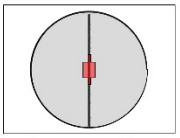
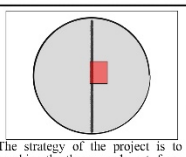
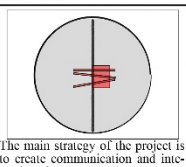
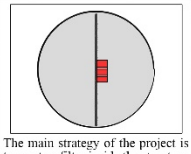
Table 16. The typological review of selected urban design projects in the context of the boundary on building/mezzo scale

TITLE OF THE PROJECT	AUTHOR OF THE PROJECT	YEAR OF THE PROJECT	AREA OF THE PROJECT	CONTEXT OF THE PROJECT	THEME OF THE PROJECT	PROPOSED DESIGN STRATEGY	PROPOSED DESIGN TACTICS
A CITY BORDER IN JERUSALEM Road 60, City Center  (SAYA, 2007)	Team: SAYA - Yehuda Greenfield-Gilat, Karen Lee Brachah, Chen Farkas, Kobi Ruthenberg Freelance Architects: Amer Kaysi, Hanna Ghawi, Michel Salameh	2007	JERUSALEM - ROAD 60	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The proposed project provides recommendations for a permanent status agreement regarding the division of Jerusalem. It offers a route for a border between two independent states. The project also provides typologies for a physical barrier along the road, and at the same time addresses the different urban needs of the Palestinian and Israeli sides.	 The strategy of the project is to provide permeability and accesibility of the boundary along the Road 60.	Making Road 60 to Binational Road with transportation system alternatives junctions in focus Creating Border Crossing Stations useful and helpful for both sides of the citizens Along the border, the barriers are produced for security and public usage with green and porous elements.
BORDER WALL AS INFRASTRUC-  (Fratello, n.d.)	Project Team: Ronald Rael, Virginia San Fratello, Brian Grieb, Nicholas Karklins, Emily Licht, Plamena Milusheva, Colleen Paz, Molly Reichert	2009	U.S-MEXICO BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project aims to use the potential of the border region by creating the border wall as infrastructure	 The strategy of the project is to connect the cities and the citizens of both sides of the border along the boundary with infrastructure systems.	**Solar security**: One square foot of solar energy production along the border can power a dishwasher for a year. **Water security**: A 20 million gallons/day wastewater treatment facility on the border between Mexicali, Mexico and Calexico, California **Social Infrastructure:** Bicycle/Pedestrian wall in Tijuana, Mexico Binational Library on the boundary **A labyrinth**: represents the enormous expense, complexity and effort in the construction of the U.S.-Mexico Border Wall
JERUSALEM ANNEX TO THE GENEVA ACCORD: A planning Guide for a Peace  BORDER GARDEN. Planning guidelines for an open space along the border LOCAL BORDER CROSSING FACILITIES. For emergency or special use Options for shared use (SAYA, 2010a)	Team: SAYA Yehuda Greenfield-Gilat, Karen Lee Bar-Sinai, Kobi Ruthenberg, Chen Farkas; in cooperation with Palestinian planners Graphic Design: Harel Schrieber, Pazit	2010	JERUSALEM - BEN HINOM VALLEY	ON THE BOUNDARY AT BUILDING/MEZO SCALE	This project forms a foundation for approaching the division of Jerusalem from the urban and architectural point of view. There are five selected urban areas in this project: French Hill, Road 60, Old City, Ben Hinnom Valley, and	 The strategy of the project is to compose a sensitive separation with a viable connection between the two sides of the Jerusalem and the citizens.	A notable pedestrian and vehicle border crossing facilities with public and commercial spaces, a binational road with transportation and infrastructure systems, enhanced accessibility to Old City and integration through Old City Gates, a natural crossing borderland with green spaces, and a mixed neighborhood are created as design tactics.
COLLECTIVE BORDER The Latent Project of Gongbei  (Harvard GSD, 2014)	Harvard University Graduate School of Design AECOM Project on China Comon Frameworks Rethinking the Development City in China Macau-Cross-Border City Yun Fu, Chen Hao Lin,	2013	MACAU CITY China-Macau Border	ON THE BOUNDARY AT BUILDING/MEZO SCALE	This project estimates the achievement border at Gongbei (border port) as the open land on the Macau peninsula. The conversion from the space of the border to the urban place is attempted to	 The strategy of the project is to reexamine the relationship between the border and the city.	To reach the project aim, empty borderland is converted to a multifunctional urban park which will cover residential buildings, production spaces, open places and the retired checkpoint buildings that are transformed into cultural and productive facilities.
URBAN RESPITE: Reframing Densi-  (Harvard GSD, 2014)	Harvard University Graduate School of Design AECOM Project on China Comon Frameworks Rethinking the Development City in China Macau-Cross-Border City Yatian Li, Mina Nishio	2013	MACAU CITY China-Macau Border	ON THE BOUNDARY AT BUILDING/MEZO SCALE	This project addresses both local people and visitors where they come together in public places as shared spaces. It aims to regenerate the streets on the boundary not just as passing spaces but also the meeting places.	 The strategy of the project is to meet both sides of the citizens on the boundary with the everted design elements.	In this project, the streets and buildings are reversed. Open spaces are in the buildings while cultural programs are in the streets. While visitors cross the border they directly arrive into the city with design interventions.
MARKED DIFFERENCE: Inscribing the City of Parts  (Harvard GSD, 2014)	Harvard University Graduate School of Design AECOM Project on China Comon Frameworks Rethinking the Development City in China Macau-Cross-Border City Navajeet KC, Josh Scheeter	2013	MACAU CITY China-Macau Border	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project aims both the initiation of new housing types in Macau and radically restructure the current and future cross-border condition.	 The strategy underlying the project is to structure the city of Macau through a common framework to revitalize the feature of the space of the interaction.	Individual sections are crafted to respond to their immediate surroundings, while the border and the city rooms provide an overall form for the wall. Each building consisted of two parts, one occupied by living and common areas, the other by work space.

TITLE OF THE PROJECT	AUTHOR OF THE PROJECT	YEAR OF THE PROJECT	AREA OF THE PROJECT	CONTEXT OF THE PROJECT	THEME OF THE PROJECT	PROPOSED DESIGN STRATEGY	PROPOSED DESIGN TACTICS
FLOATING BORDER PROJECT  (Furuto, 2013)	Borderless Competition: Designing Future ASEAN Borders 1st Prize Hélène Grialou, Sebastien Gafari	2013	CAMBODIA - THAILAND BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The Floating Border Project is an installation in order to create a moving border at the limit between Cambodia and Thailand where is currently in dispute. The limit of each state is the shadow of the floating border. The shaded frontier is moving throughout hours, days and seasons.	 The strategy of the project is to reduce the effects of the conflict while creating boundary signals.	The fortification consists of an inflatable structure which is composed of a balloon cloud upon the Preah Vihear Temple. The weather forecast, wind, and luminosity are calculated by these balloons. To reach the aim of the project, these structural interventions are proposed. During severe weather, the flying structure lights up to become a signal seen by both two countries.
NOMADS in NOMAN'S LAND  (Furuto, 2013)	Borderless Competition: Designing Future ASEAN Borders 2nd Prize Laura van Santen	2013	MYANMAR (BURMA) - THAILAND BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	In the border area between Burma and Thailand, the main potential lies in the possibility for refugees to inhabit in-between space. The aim of the project is creating more usefull spaces on the border and on the Noman's Lands.	 The strategy of the project is to integrate the large communities on the move with better economic, political, social, and environmental conditions along the boundary.	The project provides the migrants working and living area along the boundary within Noman's Lands. There would be a garment factory, production places housed in a bamboo structure suspended under the existing 'friendship' bridge with optimization of humanitarian aid. Moreover, an extraterritorial settlement will form on the boundary river, composed of renewable and recycled materials.
KYRGYZSTAN-CHINA BORDER CROSSING  (acsa-arch.org, n.d.)	2013-2014 STEEL DESIGN STUDENT COMPETITION: BORDER CROSSING JOINT FIRST PRIZE Donovan Dunkley, Vail Nuguid, Alexia Sanchezm	2014	KYRGYZSTAN - CHINA BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project aims to allow for residents from both sides of the boundary to be able to see their target as well as the interactions taking place in the neighboring building.	 The underlying strategy of the project is to connect both sides of the boundary with effective facilities for students, citizens and visitors.	The primary structural system consists of steel structures crossing the entire width of the building, while the diagonal steel members of the secondary system perform as cross stimulating and provide the twisting facade and penthouse masses.
INTERJECTION  (acsa-arch.org, n.d.)	2013-2014 STEEL DESIGN STUDENT COMPETITION: BORDER CROSSING FIRST PRIZE Kyle Marren	2014	SPAIN - GIBRALTAR BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project of the interject aims to improve the link that has been broken between Gibraltar and Spain. The consolidation of the border crossing station on the Spanish side of the border consolidates Spain to get territorial ownership over the border crossing, while to provide goodwill as Gibraltar gains entrance space.	 The strategy of the project is to provide and allow for the sharing of culturei ideas, human experiences, and integration.	The healing project improves spatial qualifications and provides large public green spaces for combining connections and encouragement of goodwill between two sides of the boundary.
THRESHOLD AMPLIFIED: A BORDER NARRATIVE BOUND BY PLACE + TIME  (acsa-arch.org, n.d.)	2013-2014 STEEL DESIGN STUDENT COMPETITION: BORDER CROSSING THIRD PRIZE Jorge Cornet, Adam Schroth, Thomas Soldiviero	2014	UK-CHILE - ARGENTINA THE ANTARCTIC BORDER CROSSING	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project proposes a robust aspirational design concept for the context between water and ice, light and dark, and bound by place and time.	 The strategy of The Antarctic Border Crossing Station is to establish as a contact point betwen people and place.	Investigation facilities, an expansive customs hall, and experimentation facilities supporting tourism and ecological study are incorporated within the program to promote a unique relationship amongst the users, wildlife, and the surrounding geopolitical landscape.
HEALING THE LIMINAL SPACE Student project on the Nicosia Buffer Zone  (Hadjri, Ozersay, & Chatzjichristou, 2014)	12 Sixth Year Architecture Students from the School of Planning at Quen's University / Belfast	2014	NICOSIA Cyprus Buffer Zone	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The twelve students produce an urban and landscape interventions for the buffer zone in line with their individual schemes by proposing facilities that can be shared by the two communities (civic, cultural, community and educational).	 The strategy of the project is to provide permeability of the buffer zone in Nicosia to meet the needs of the Nicosia citizens.	To reach the project aim, eight design challenges and topics raised: 1-Defining and intervining in an urban entity 2-Understanding the parts that make the whole 3-Erasing or preserving the marks of the wound 4-The old texture and the new inserts 5-The meaning of preservation, memory and history 6-Reusing the existing buildings 7-The notion of neutrality 8-Transference of knowledge

TITLE OF THE PROJECT	AUTHOR OF THE PROJECT	YEAR OF THE PROJECT	AREA OF THE PROJECT	CONTEXT OF THE PROJECT	THEME OF THE PROJECT	PROPOSED DESIGN STRATEGY	PROPOSED DESIGN TACTICS
THE TREE WALL  (archstorming.com, n.d.)	UNBUILD THE WALL COMPETITION U.S-MEXICO BORDER 1st Prize Stefano Bastia, Eurind Caka, Giobvani Sanna, Nicola Magri	2017	NOGALES CITIES - U.S-MEXICO BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The proposal of The Archstorming Team eliminates the existing buildings and the wall between the Cities of Nogales and supports respectful and controlled guidance of the migrants' flow.	 The strategy of the project is to create a non-aggressive, socially inclusive border-crossing with green meeting space.	The project aims to break down a physical barrier by creating a transitional space, a safe landing, a central meeting space and the local tree species will take the wall's place.
ALL MEN'S LAND  (archstorming.com, n.d.)	UNBUILD THE WALL COMPETITION U.S-MEXICO BORDER 2nd Prize Ileana Savascu	2017	NOGALES CITIES - U.S-MEXICO BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project proposes to activate the border while creating a visa-free, bi-national, shared space. The project accepts the proposal as a buffer zone shaped as a park that increases the perceptibility between the two sides and where people can spend time and share together towards a more humanitarian and equal society.	 The primary strategy of the project provides to create a hetaerarchical community with porous border structure on the boundary.	The attempt cafes, galleries, workshop studios, performance spaces, outdoor terraces, information centers on immigration, along with accessible rooftop gardens on the boundary. To create this atmosphere, it provides to share both migratory checkpoints of Mexico and the US the same geometry.
DIS . ARMATURE  (archstorming.com, n.d.)	UNBUILD THE WALL COMPETITION U.S-MEXICO BORDER 3rd Prize Kristin Agnello, Corrado Agnello	2017	NOGALES CITIES - U.S-MEXICO BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	This project proposes the destruction of all existing structures on the border between the U.S and Mexico while providing a shared cultural space that is collaboratively held by the American, Mexican, and Tohono O'odham Nations. Pedestrians and vehicular traffic are separated along the boundary with the proposed horizon.	 The strategy of the project is to combine the cultures, not divide while creating a horizon along the boundary with freedom.	To reach the aim of the project, it makes the border control buildings disappear, while rising the cultural facilities along the boundary. The primary goal is to provide people not using any wall gate, or fortification elements to go in the project of the dis. Armature.
TWO CITIES ONE HEART  (europan.fi, 2017)	EMBRACE THE BORDER COMPETITION Tornio-Haparanda WINNER Vilma Autio, Maija Parviainen, Hanna Kuivalainen	2017	TORNIO - HAPARANDA SWEDEN - FINLAND BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	This projects aims to create twin city with one heart from two cities seperated by border.	 The strategy of the project is to stitch the urban fabric of two sides of the boundary.	To reach the aim of the projects, three basic elements are used: The Tornio Haparanda Loop which is a pedestrian pathway connecting the two city structure, A Productive Boulevard and The Rajakaari Park which is an arctiv void - active park and defined by a variety of neighborhoods, each with their own distinctive profiles.
THE ENGAGEMENT  (europan.fi, 2017)	EMBRACE THE BORDER COMPETITION Tornio-Haparanda RUNNER-UP Jean-Michel Humbert, Sasha Petersen, Kelsey Kish, Rebekah Armon-	2017	TORNIO - HAPARANDA SWEDEN - FINLAND BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project focuses on renegotiating the hierarchy of elements a border condition creates and questions the future of production.	 The primary strategy of the project is to create a focal point on the boundary for the pedestrians with greenery.	To create a pedestrian-friendly road Portions of E4 Boulevard is cut and slid. New education and small business are proposed with open and public green spaces. Boulevards through both cities with new small business, manufacturing and residential program are developed.

TITLE OF THE PROJECT	AUTHOR OF THE PROJECT	YEAR OF THE PROJECT	AREA OF THE PROJECT	CONTEXT OF THE PROJECT	THEME OF THE PROJECT	PROPOSED DESIGN STRATEGY	PROPOSED DESIGN TACTICS
INFLATO BORDER  (buildingtheborderwall.com, 2017)	BUILDING THE BORDER WALL An International Design Competition to Re-conceptualize the U.S-Mexico Border Wall Michelle Stein, Shannon Ruhl, Donna Ryu, Rosa Cristina Corrales Rodriguez	2017	U.S-MEXICO BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	"The project proposes a border that embraces the changing needs of each nation and their people, and celebrates diversity through shared initiatives. Exploring opportunities for adaptability and permeability, the project reject the border wall as a fetishized object and call for the two nations to live within and around their shared border differently."	 The strategy of the project is to create a permeable wall which brings both sides of the communities.	Inflatoborder is a system of soft bubbles that perform a variety of functions Air pressure is adjusted according to need—creating a fringe, for example, that shelters roadside markets where it operates through agricultural lands or building "play area" forms for families and children in densely populated city centers straddling the border.
SECOND WALL OF AMERICA  (buildingtheborderwall.com, 2017)	BUILDING THE BORDER WALL An International Design Competition to Re-conceptualize the U.S-Mexico Border Wall Gautier Piechotta, Wu Di	2017	U.S-MEXICO BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	Mexicans workers will build the wall of the project should propose a viable recommendation to the water crisis in the region, and thus this "second wall" could make American wall useless. To benefit from the irrigation wall, the US would be obliged to destroy their current wall. They would need the arrangement of Mexico through a binational agreement directing to the necessity of rethinking a new treaty for work immigration, sharing water and agreeing on common ground for human rights.	 The strategy of the project is to use border wall as a irigation wall.	The idea of the project is that predicting the potential fatigue of the vital resource of water along the U.S.-Mexico border, an "irrigation wall" would draw water from the Gulf of Mexico, the Sea of Cortez and the Pacific Ocean, desalinate it and flow it into a channel running the length of the boundary. Re-vegetation of the desert, the production of agricultural operations on either side of the channel and new bilateral arrangement governing the distribution and use of the water between the two countries would be the possible benefits.
BORDER PARK  (buildingtheborderwall.com, 2017)	BUILDING THE BORDER WALL An International Design Competition to Re-conceptualize the U.S-Mexico Border Wall Wesley Thopson, Josie Baldner, Hiroshi Kaneko	2017	U.S-MEXICO BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The Project reject a rigid wall that separates nations and people. This plan proposes a bi-national park running along the boundary that is a symbol against difference.	 The strategy of the project is to formulate a sharing border park along the boundary.	With this project, the border is taken down and replaced with a park where people from both sides of the border can engage in outdoor activities.
ACROSS  (buildingtheborderwall.com, 2017)	BUILDING THE BORDER WALL An International Design Competition to Re-conceptualize the U.S-Mexico Border Wall Caleb White, Emily Gruendel	2017	U.S-MEXICO BORDER	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project, called "Across," build a flexible pellicule as a border crossing facilities which can take on plans that are shared by the inhabitants on either side of the border.	 The primary strategy of the project is to create mutual voids and shared assests as a foci along the boundary.	To reach the primary goal of the project, the wall now becomes a positive space and a model of activity for both sides. The indirect interactions that emerge between citizens of either side of the border would create a more united society around the new shared resources and facilities.
THE PINK "PRISON WALL"  (Garfield, 2017)	PROPOSALS FOR THE TRUMP'S BORDER WALL Agustin Avalos/Estudio 314	2017	U.S-MEXICO BORDER WALL	ON THE BOUNDARY AT BUILDING/MEZO SCALE	This project is a hot pink border that stretches 1,954 miles, called the "Prison-Wall." The designers imagined a pink wall, since Trump has said it should be	 The strategy of the project is to create a physically huge but contrast wall including prison with pink structure.	It would include a prison for immigrants, holding up to "11 million people who Trump plans to deport while creating a pink wall.

TITLE OF THE PROJECT	AUTHOR OF THE PROJECT	YEAR OF THE PROJECT	AREA OF THE PROJECT	CONTEXT OF THE PROJECT	THEME OF THE PROJECT	PROPOSED DESIGN STRATEGY	PROPOSED DESIGN TACTICS
A ONE WAY PLEXIGLASS WALL  (Garfield, 2017)	PROPOSALS FOR THE TRUMP'S BORDER WALL Penna Group Design	2017	U.S-MEXICO BORDER WALL	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The wall is designed to work as a one-way mirror. Citizens on the US side would see through, but those on the Mexico side would not.	 The strategy of the project is to create a see-through mirror privileged to one side.	The project designs the wall with Neoclassical architecture and tall, can drain rainwater, has mechanized doors for vehicles, and is hard to climb, tunnel under, or tamper with.
A PARK SHARED BY MEXICO AND U.S  (Garfield, 2017)	PROPOSALS FOR THE TRUMP'S BORDER WALL Wesley Thompson, Hiroshi Kaneko, Josie Baldner	2017	U.S-MEXICO BORDER WALL	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The main gaol of the project is that citizens from both sides could hike and camp in the nature reserve along the boundary. The bi-national park services from the US and Mexico would keep the area equally, and both countries would generate money from visitors.	 The strategy of the project is to create a shared place which can be used equaly.	The proposed project aims to create a bi-national park instead of Trump's Wall.
BERLIN OVER THE WALL FIRST PRIZE  (Berlin: Over the Wall, 2015)	Zanoni Enrico	UN-KNOWN	BERLIN WALL	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The primary goal of the project is to create a permeable space under the vacuum where artists and the society can meet and shared with each other.	 The main strategy of the project is to integrate the artists with community.	The architectural component is a public space experienced by the citizens, a path that leads from the ground floor to the last level where a panoramic view on axis with the bridge becomes perfectly located on the river Spree. The route winds occupying almost the entire area and allows the audience to rise physically and intellectually thanks to the art gallery and urban passage.
BERLIN OVER THE WALL SECOND PRIZE  (Berlin: Over the Wall, 2015)	Di Gianni Francesco, Fogliano Antonio	UN-KNOWN	BERLIN WALL	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project is placed next to the bridge Oberbaum, which has always connected urban scale. The idea of the project is to create a pedestrian and bike route that starts from the park Gorlitzer could get to the core of the Friedrichshain district.	 The strategy of the project is to connect the Oberbaum bridge with the city.	Within the project area, different paths are formed that allow viewpoints effective and evocative. Unlike the wall that created the division, the project creates a penetrable structure.
BERLIN OVER THE WALL THIRD PRIZE  (Berlin: Over the Wall, 2015)	Redaelli Luca, Norella Spadaro Andrea, Valle Eleonora	UN-KNOWN	BERLIN WALL	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project becomes a lighter surface that covers the building. A shade glazing along the entire ground floor is increasing the direct relationship with the users.	 The primary strategy of the project is to create permeable structrue which combine with the wall.	Morphologically the building is based on two main reference point managed by the bridge Oberbaumstrabe and Schlesische Str. The structure would combine these lines, and it is permeable from the outside. The complex is connected to the public park in front with a canopy.
BERLIN OVER THE WALL THIRD PRIZE  (Berlin: Over the Wall, 2015)	Stecca Marco	UN-KNOWN	BERLIN WALL	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project aims at the realization of various environments on multiple levels able to alternate moments of privacy in moments of sharing. The layout of the residential blocks allows the proposed residential area to be porous in the urban fabric.	 The strategy of the project is to combine the three words: art, fragment and wall.	The formal development begins thinking about the wall under the idea of the obstacle. The residential types are diverse, and the romantic attractiveness of a terrace was intended to allow a park overlooking the preexisting maintaining a visible and spiritual attachment with the place.
BERLIN OVER THE WALL MENTION  (Berlin: Over the Wall, 2015)	Comin Giulia, Sasso Chiara, Tobis Iga	UN-KNOWN	BERLIN WALL	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project proposes a solution that resembles beyond the simple residence to meet the requirements of everyday life for all. The strategic location of the place meets everyone's needs. The building is not a physical barrier but also a symbol of remembrance that is new value through art.	 The main strategy of the project is to create communication and integration place.	The project creates a container in which the whole society could communicate and socialize. On the ground floor of the structure, it is entirely penetrable, providing the mixing of public and private spaces which give the users various functional facilities such as libraries, shopping, and dining areas.
BERLIN OVER THE WALL MENTION  (Berlin: Over the Wall, 2015)	Baiocco Chiara, D'Addona Marta	UN-KNOWN	BERLIN WALL	ON THE BOUNDARY AT BUILDING/MEZO SCALE	The project has given a new role to the component wall here is not proposed as a divider but as a filter. The wall becomes a facade of a new building that protects and exhibits a fantasy world in which the artist lives.	 The main strategy of the project is to create a filter inside the structure.	The facade, in line with the front of the buildings, is entirely designed and colored with graffiti and photographs. Inside, the sizeable column-shaped tree creates an imaginary forest where the artist lives, produces and exhibits his work. The environment, away from the noise and bustle of the city, promotes meditation allowing the sharing and participation.

5.1.2. Designing the Border

Eight out of the selected 45 projects are in the context of the border. These projects are suggested on the city scales. The most common features of them are the design strategies to cover both sides of the border on a scale of the city. Some of them focus on one specific problem or one specific way of solutions, while others deal with the cities within more comprehensive urbanistic interventions. In order to characterize this type of urbanistic perspective properly, two of the selected projects are examined in detail.

5.1.2.1. *Tourism Based Border Regime for Jerusalem in Peace* by SYAY (2010b)

The first example is proposed by SAYA Group with Yehuda Greenfield-Gilat, Karen Lee Bar, Sinai Farkas, Chen Farkas, and ECPD in Jerusalem (2010b). The design project is proposed for ECF (Economic Cooperation Foundation) and PDF (Peace and Democracy Forum). This project is an additional step in a series of projects carried out by ECF and PDF. Jerusalem is one of the main historical cities and touristic sites of the World, especially for the three religions in the region. According to SAYA (2010b), the most significant challenges that will arise in the peace period is suggested to be tourism. The project establishes a well-designed system of connections between the two sides of Jerusalem. The primary goal of the project is to develop a comprehensive border regime for tourism comprising both sides of the city and to simulate the tourists' attraction into the city. Moreover, the plan aims to conserve the multi-ethnic structure of Jerusalem (p. 6, 7, 10).

Tourism changing trends in years both from the East and West, the Israeli-Palestinian tourism market potential, history of the demarcation processes are analyzed at the very beginning of the project to reveal the problems and potentials of the city. After these analyses, the spatial structure of tourism in Jerusalem are conceived. Main touristic and religious sites are defining the areas of interest of each religion; Christian, Muslim and Jewish, tourism facilities and infrastructure, hotels and rooms, main access and transportation routes are revealed and superimposed on the map (see: Figure 36).

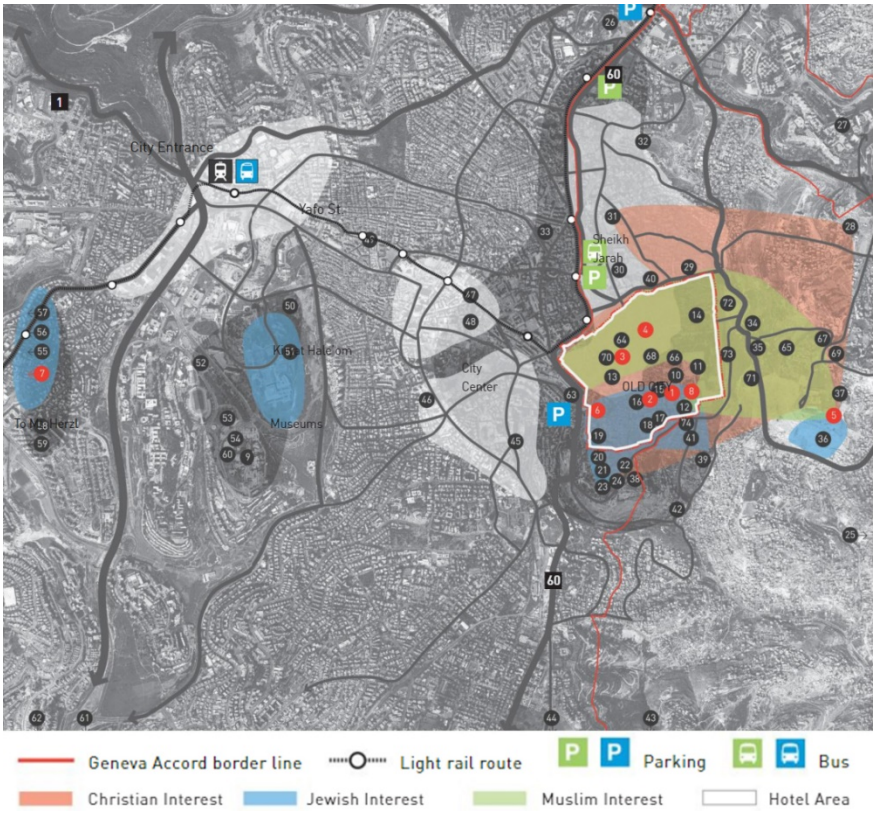


Figure 36. Superimposition of the Jerusalem touristic areas with main urban connections (Source: SAYA, 2010b, pp. 60-61)

After creating the existing tourism map of Jerusalem, four subcategories are defined to find solutions to the major problems encountered in the tourism-based border regime plan.

First of all, the new crossing facilities are proposed to make the movement of tourists, goods, and labor easier. The Old City gates are gateways into the particular regime and provide the opportunity to enter the Old City from both sides (see: Figure 37).

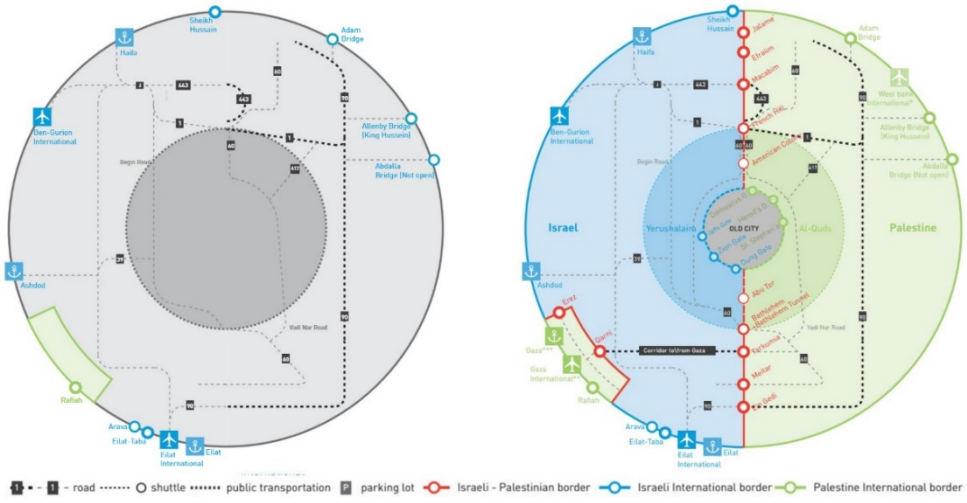


Figure 37. Main routes to/from Jerusalem – existing (left), main routes to/from Jerusalem – proposal (right) (Source: SAYA, 2010b, pp. 66-67)

Secondly, the project designs how the crossing facilities operate. Facilities are examined in terms of their scale of the terminal and types of passage (i.e. private vehicles, buses, pedestrians or groups) (see: Figure 38).

Another subgroup intervention for the strategy is on the Old City Gates. The project provides security condition in the Old City with operations of the Gates. There are two scenarios for possible security arrangements for the Old City gates, and for both of them, inspection upon entering and exiting ensure the higher level of border coordination required (see: Figure 38).

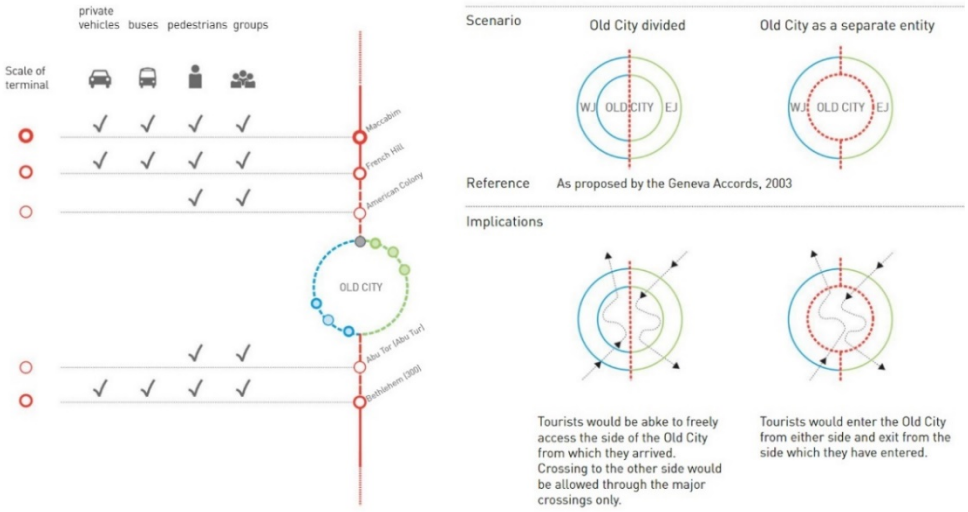


Figure 38. Operations of crossing facilities (left), and those of the old city gates (right) (Source: SAYA, 2010b, pp. 68, 70)

As the final strategy of the project, the plan provides tourism routes and scenarios. The project classifies the different types of future visitors to Jerusalem. This classification contains the common visitor types linking their visit of interests, their country of origin, their arrival points, accommodation areas with the geography and operation of the border facilities. In terms of the visitors, interest plan provides comprehensive alternatives covering all types of visitors. The proposal of the ideal tourist scenario contains joint interest (see: Figure 39).

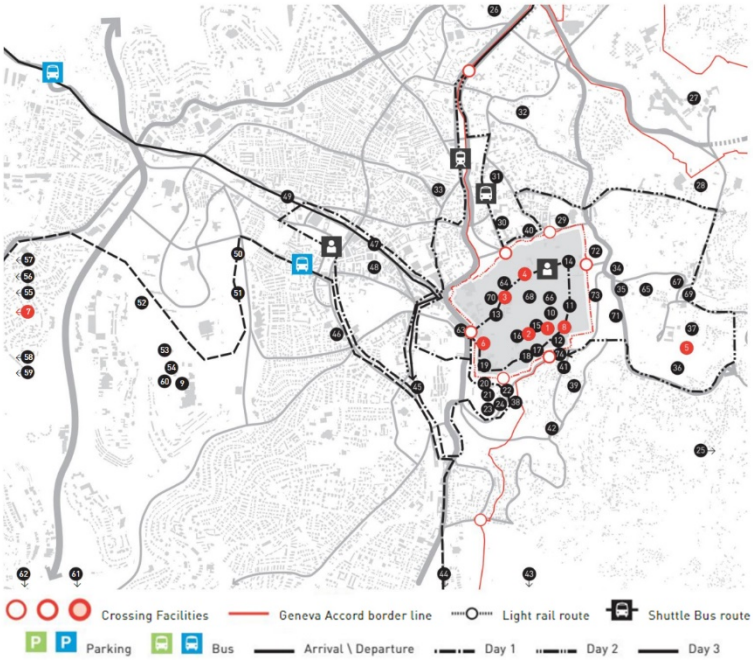


Figure 39. Routes and patterns of visits to Jerusalem (Source: SAYA, 2010b, pp. 82-83)

Besides all these strategies, the plan proposes the controlling strategies of tourism based movement, the shuttle service for tourists and parking facilities. While combining all the strategies and interventions, the tourism-oriented urban development plan is suggested. The project also provides a guideline for the tourist about how a tourist can cross the border of Jerusalem.

When all strategies and interventions are examined, it is clearly seen that the plan has a very comprehensive point of view in a tourism-based perspective. All the details are put in the project sensitively, and it provides the tourist to visit Jerusalem in terms of their interest readily. However, there are two main problems with the project specified. Both of the problems are related to the basic preference of the project to focus on

tourism. The project provides lots of opportunities and convenience to the tourists. However, it does not take the citizens of the Jerusalem into consideration sufficiently. While making a tourism-based urban development, the very first thing to look at is the citizens, their needs, interests, and daily lives. It could cause the separation of the Jerusalem citizens. Another problem is that the plan provides different alternatives for the tourists based on their religious and their origins. This separated tourism routes could lead to division between the people and prevents the people to integrate at the very outset of the projected transformation.

5.1.2.2. Binational *Border City* by Fernando Romero (2016)

This project developed by Mexican architect Fernando Romero has a utopian vision for a walkable city between the U.S and Mexico. This utopic 'Border City' is the first integrated masterplan for a binational city was exhibited at London Design Biennale in 2016. According to Fernando Romero Enterprise

"The concept is rooted in the long history of places where frontiers meet, cities where cultures both clash and blend." The area of the plan is located near the paired border city of El Paso and Ciudad Juarez. The project annihilates the restrictions and physical elements on the boundary and provides a united binational city. (Fr-ee.org 2016)

This integrated master plan recognizes the lack of urban planning while providing useful opportunities for both sides of the border, and benefiting from industrial, employment and commercial opportunities. Romero's hexagonal urban prototype is thought to provide a new model for cities as the population increases, immigration increases, and economies continue to globalize (Fr-ee.org, 2016).

The main intention of the project is to create a polycentric city and connect the communities and industry with crisscrossing roadways. The land-use decisions help for connecting the binational border city within itself. In that aim, the project proposes the routes of pedestrian, cycle, and private cars with public transportation systems (see: Figure 40-41).

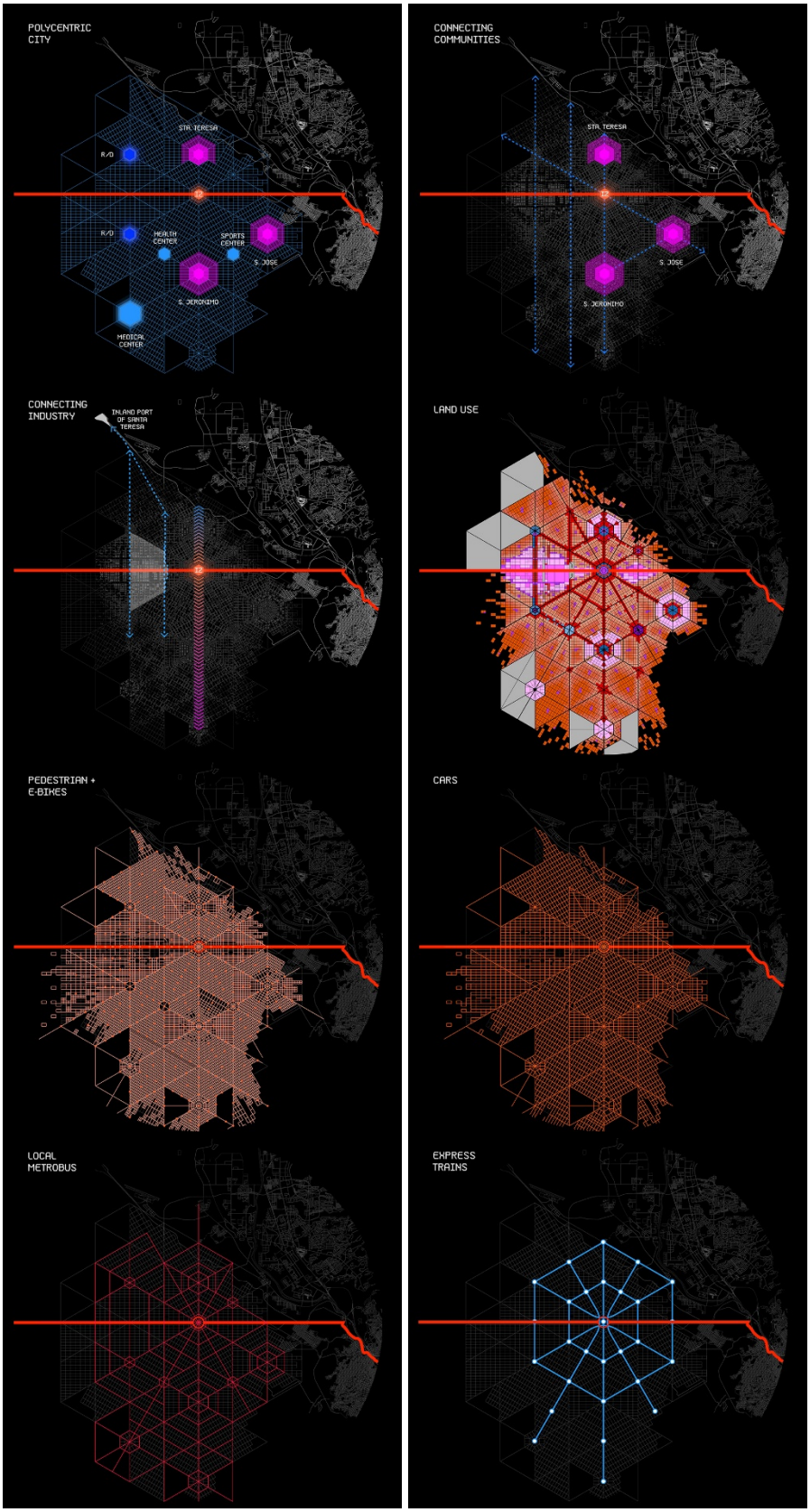


Figure 40. Design diagrams of ‘Border City’ (Source: Fr-ee.org, 2016

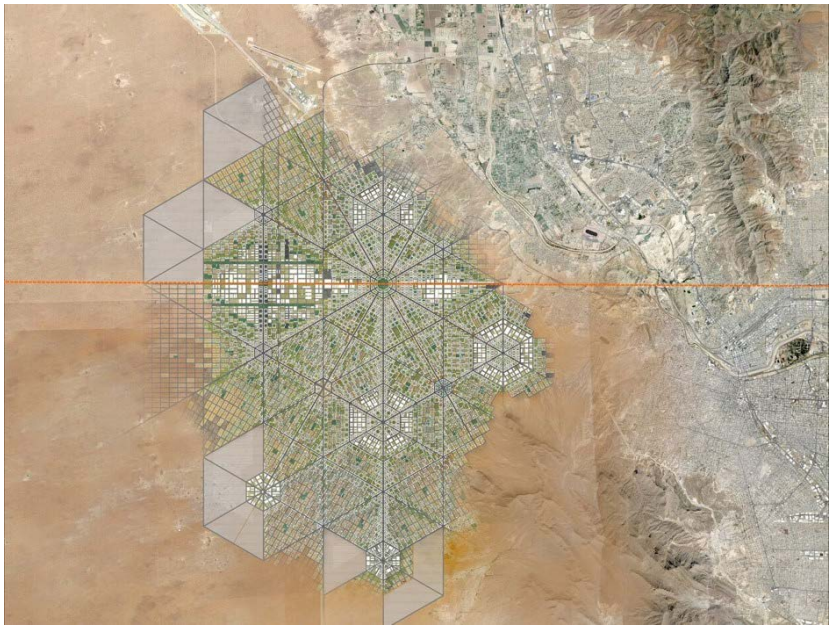


Figure 41. The proposed design scheme of the binational ‘Border City’ (Source: Fr-ee.org, 2016)

This project responds to the limitation of the citizens and border people with regards to their economic, socio-spatial, and socio-political problems. Border people can live without any restrictions, any dividing element, or any discrimination in this proposed binational ‘Border City.’ The key strong feature of the project is that the plan is suggested for one united city regarding all urban planning requirements such as connecting links, land-use decisions, pedestrian pathways, public transportation systems, and economical sources. The project analyzes the border condition in every field from the rates of the slums in the world to the potentials of solar energy in the U.S and Mexico, from border industry to population and immigration increases. All the analyses provide the basis for the comprehensive design framework. On the contrary, if the project is to be reviewed from a realistic point of view, one would argue that the design approach falls unrealistic in dealing with the actual the obstacles and limitations against an integrated border condition. Moreover, the design is proposed just near the paired border cities of El Paso and Ciudad Juarez, so it could have got more reference from the existing larger spatial context.

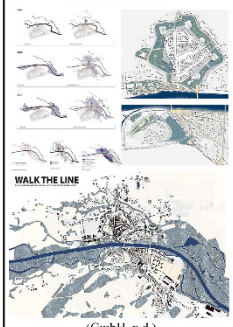
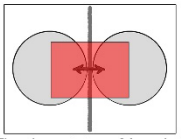
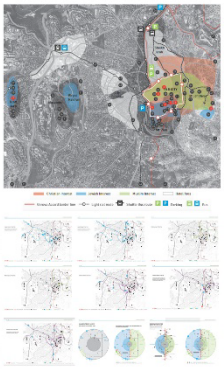
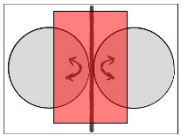
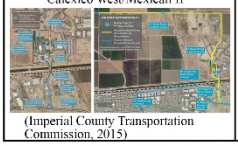
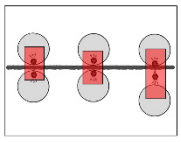
All the eight examples in the genre of border condition are briefly examined in Table 17 to get an overview of the proposed strategic design approaches to the border along with the specific design strategies and tactics.

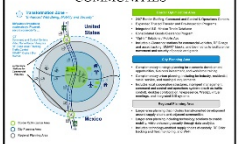
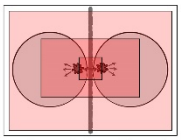
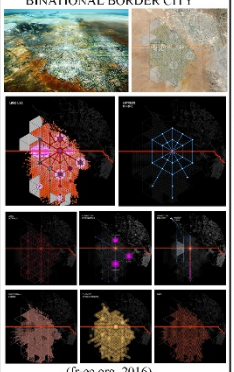
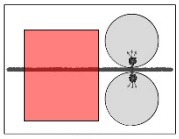
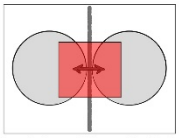
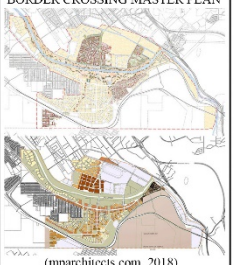
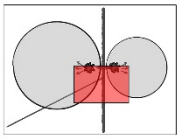
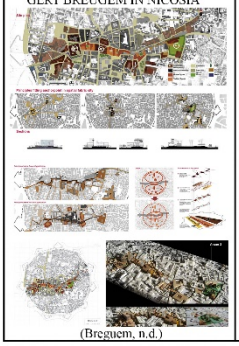
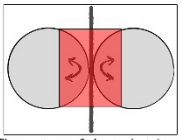
Within the context of the border, the projects are located where the control levels are lower at checkpoints or at open boundaries for design interventions. These types of projects are located between the paired border cities. The most of the interventions do not cover whole the urban land but contain some parts of the cities closed to the boundary with checkpoints.

The main problematic issues that the projects try to solve is that the lacking of integrative planning approaches. Whether allowed or not allowed to cross, paired border cities live together with same geography and citizens with same background. That is why the holistic planning approaches on the border conditions at city scales is to be needed. These projects provide remedied the deficiencies in the urban planning.

The most critical problem is specified as connecting the links between the cities, and the strategies proposed accordingly to create an integrative cities. Almost all the projects provide both pedestrian pathways and public transportation systems which are crossing the border and penetrate into the cities. This signifies the fact that, in the provision of higher integration at the paired border cities, transportation is the prominent factor to be constituted by design.

Table 17. The typological review of selected urban design projects in the context of the border on the city scale

TITLE OF THE PROJECT	AUTHOR OF THE PROJECT	YEAR OF THE PROJECT	AREA OF THE PROJECT	CONTEXT OF THE PROJECT	THEME OF THE PROJECT	PROPOSED DESIGN STRATEGY	PROPOSED DESIGN TACTICS
WALK THE LINE  (GmbH, n.d.)	BILATERAL DESIGN COMPETITION SPATIAL CONCEPTS FOR THE CONNECTION OF THE BORDER TOWNS BAD RADKERSBURG AND GORNJA RADGONA 2ND PRIZE	2008	AUSTRIA - SLOVENIA BORDER	ON THE BORDER AT CITY SCALE	The idea connects with the border which was at its most noticeable during the past decades. The former border bridge, which is split up like an obstacle between the two historic centers of the towns of Bad Radkersburg and Gornja Radgona, transforms; an area of transition becomes inhabitable, experienceable space. Released from motor traffic, the bridge forms an artifact, a no man's land between the two countries, a 'third something' between the two entities of Bad Radkersburg and Gornja Radgona.	 The primary strategy of the project is to maintain a fragile balance between both cities.	The former border crossing is transferred to the position of the previous rail bridge results in the conjunction of the expansion places of two towns. The overall urban development concept for both towns has the goal to strengthen the various urbanistic qualities and the specific townscapes of Gornja Radgona and Bad Radkersburg, and, on the other hand, to give an urbanistic thought for united growth. The Town Park is the connection between the spa, town center, and the river Mur. It should be a point of attraction for the citizens as well as for the visitors of the health resort.
THE TOURISM BASED BORDER REGIME FOR JERUSALEM IN  (SAYA, 2010b)	SAYA, YehudaGreenfieldGilat, Karen Lee Bar-Sinai, Chen Farkas, ECDP, Harel Schreiber	2010	JERUSALEM ISRAEL - PALESTINE BORDER	ON THE BORDER AT CITY SCALE	The touristic 'master plan' proposes to assure Jerusalem's authentic role as a city of connectivity, where cultural, economic, and social bridges have to be built to maintain the essential mediating role of a zone receiving both Palestinian and Israeli sovereignties.	 The primary strategy of the plan is to develop comprehensive border regime study for tourism in the context of both sides of the Jerusalem and to simulate the movement of the tourists in the city.	New crossing facilities are proposed to make it easier with various types of them. Operating the crossing facilities allows the vehicles, public transportation systems, pedestrians, and bicycles differently. The project also aims to provide a secure Old City Gates with permeability. The plan also includes tourism routes regarding different interests of religions cultures or nations.
PEDESTRIAN AND BICYCLE TRANSPORTATION ACCESS STUDY FOR THE CALIFORNIA/BAJA-CALIFORNIA LAND PORTS OF ENTRY San Ysidro/Puerta Mexico-El Chaparral  Otay Mesa/Mesa de Otay  Tecate/Tecate  Calexico West/Mexicali I  Calexico West/Mexicali II  (Imperial County Transportation Commission, 2015)	**Lead and Partner Agencies:** Imperial County Transportation Commission (ICTC) – Lead Agency, California Department of Transportation (Caltrans), San Diego Association of Governments (SANDAG), Secretaría de Infraestructura y Desarrollo Urbano del Estado (SIDUE)	2015	U.S-MEXICO BORDER	ON THE BORDER AT CITY SCALE	This study aims to develop the travel activity for people walking or cycling across the California/Baja-California border, attempting to make trips safer, more available, and more comfortable.	 The strategy of the plan is to create an accessible border crossing for pedestrian and bicycles.	The bicycle recommendations include dedicated inspection path facilities, bicycle routes, signage, and parking. The pedestrian projects promote amenities and sidewalk or pathway improvements in both nations.

TITLE OF THE PROJECT	AUTHOR OF THE PROJECT	YEAR OF THE PROJECT	AREA OF THE PROJECT	CONTEXT OF THE PROJECT	THEME OF THE PROJECT	PROPOSED DESIGN STRATEGY	PROPOSED DESIGN TACTICS
REALIZING THE BORDER DIVIDEND: SMART CITY PAIRS CAN TRANSFORM U.S.-MEXICO BORDER COMMUNITIES  (Galizia & O'Gara , 2015)	Tom Galizia , Jim O'Gara	2015	U.S-MEXICO BORDER	ON THE BORDER AT CITY SCALE	The project addresses how implementing a Smart Cities Framework could modify the border, producing a potential "Border Dividend" for districts both in the U.S. and Mexico.	 The primary strategy of the project is to create the cross-border connected city with the technology and governance at the core of border region transformation.	*"The resulting Cross Border Connected Cities concept involves four key components: (i) Creation of a Transformation Zone; (ii) Strategic Bundling of Programs; (iii) Development of a Governance Structure and Challenge Process; and (iv) Technology Architecture"*
BINATIONAL BORDER CITY  (lr-ee.org, 2016)	Fernando Romero Enterprise	2016	U.S-MEXICO BORDER	ON THE BORDER AT CITY SCALE	The integrated master plan recognizes the lacking of urban planning while providing useful opportunities for both sides of the borders and benefiting from industrial, employment and commercial opportunities.	 The strategy of the project is to response the obstacle of the citizens and border people regarding economic, socio-spatial, and socio-political problems.	The major implementation of the project is to create a polycentric city and connect the communities and industry with crisscrossing roadways. For the connecting goals, the project proposes the routes of pedestrian, cycle, and private cars with public transportation systems.
RIVERINE PROPOSED MASTER PLAN OF STRABANE-LIFFORD  (derrystrabane.com, 2017)	CITY COUNCIL	2017	STRABANE - LIFFORD NORTH IRELAND - IRELAND BORDER	ON THE BORDER AT CITY SCALE	The project allows the opportunity to positively transform the area and improve its profile as an attractive visitor destination.	 The strategy of the project is to transform the area for the citizens and border people.	The Riverine concept plans comprise unused open natural spaces, partially covered outdoor public places, community building radiating out into shared featuring walkways, river access and parking. Improved infrastructure with a new cross-border greenway system connecting Lifford and Strabane as well as a cross-border pedestrian bridge linking the towns.
DOWNTOWN CORRIDOR AND BORDER CROSSING MASTER PLAN  (mparchitects.com, 2018)	**Client**: City of Sunland Park	2018	SUNLAND PARK NEW MEXICO U.S-MEXICO BORDER	ON THE BORDER AT CITY SCALE	The master plan for Sunland Park sits at the crossroads of the United States-Mexico border and the juncture of three states: New Mexico, Texas, and Chihuahua. Includes a new international border crossing, a downtown neighborhood with new civic and recreation centers and a mixed-use corridor that provides for residential and retail development.	 The strategy of the project is to create a focal and mixed district which is located between the three states and two countries.	The plan focuses on urban quality and land-use decisions around several essential features such as El Cristo Rey Mountain, the Rio Grande and the Sunland Park. Future development is managed by a system of pedestrian-friendly blocks and streets with an improved system that recognizes and preserves existing assets that will encourage a prosperous future for the Sunland Park.
FINAL YEAR PROJECT OF GERT BREUGEM IN NICOSIA  (Breguem, n.d.)	Gert Breugem	UN-KNOWN	NICOSIA CYPRUS BORDER	ON THE BORDER AT CITY SCALE	The project aims to reunite the two cultures regarding spatial and architectural means of the city. The task of the proposal is to develop out of the historical and cultural context.	 The strategy of the project is to stimulate the process of cultural change and regeneration in the core of the old town.	The core of the project consists of three anchors acting as cores of urban activity in combination with a spatial framework at the exact place of today's demilitarized zone. The three anchors are hitched to critical historical routes, their architecture and spatial significance elevating them to new icons for the city. Step by step, the areas between the anchors are reallotted from two parallel routes issuing from the two cultures. These routes form new structures assembled from the formal idiom of the two cultures (Breguem, n.d.).

5.1.3. Designing the Frontier

In addition to the context of the boundary and border, there are projects focused on the context of the frontier. Seven projects out of the 45 selected ones are at the regional scales. These types of proposals cover the border regions with their border cities from one or several neighboring countries. In these projects, regional development or regional consolidation strategies is specified as the primary design objective. Before presenting the typological overview of that type of projects, two of them are examined in detailed, below.

5.1.3.1. *Blue Neutralized Zone (BNZ)* by Soyoun Kim (2017)

This project is developed against the De-Militarized Zone (DMZ) between North and South Korea. By the project called Blue Neutralized Zone (BNZ), architect S. Kim tends to imagine better interaction between the citizens of both countries. To that aim, the project suggests a serious of architectural structures along the zone in every ten kilometers. 25 different buildings and monuments are to erect between the North and South Korea to enable both sides of the citizens to meet and communicate (see: Figure 42).

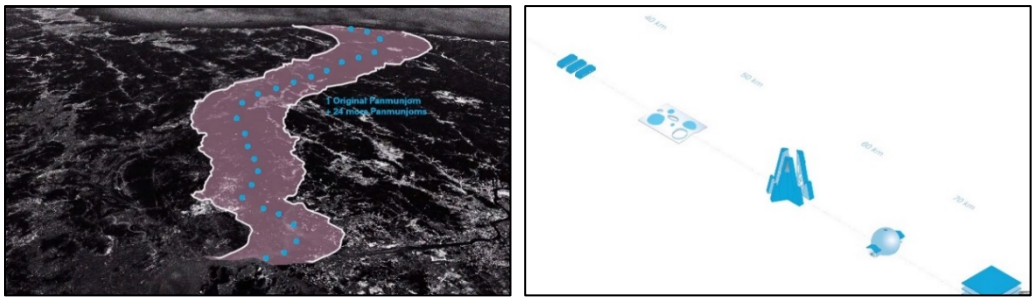


Figure 42. Twenty-five buildings and monuments in Blue Neutralized Zone (Source: Frearson, 2017)

The idea is inspired by a former village on the border. It was the place where the two countries signed an agreement to ending the Korean War in 1953. Today there is a peace museum in one of the village's remaining buildings. This museum is the starting point of the project in addition to further 25 buildings and monuments. This 25 meeting places along the border contains safari, hair salon, monument, original Panmunjom, swimming pool, hotel, café & restaurant, mall, memorial hall, lecture hall, gallery, club, shelter, playground, pavilion, square, bridge, religious space, theatre, rest area, shrine, stadium, and an amusement park (see: Figure 43).

Figure 43. The monuments and the buildings of the project (Source: Frearson, 2017)

North and South Korea have been in conflict for years, and the boundary between them is in the category of closed boundaries. The border between North and South Korea with De-Militarized Zone (DMZ) it could be called a *closed frontier*, as well. Under this circumstances, it seems very difficult to apply the project. However, the approach is not unrealistic, and it could help the connection and integration of both sides of the citizens along the border via the proposed public places.

5.1.3.2. *Banking on the Border* by Lateral Office (2012)

This project prepared by Lateral Office in the U.S-Mexico border (2012), is a proposal of the water usage in urban and agricultural lands, and also a regional study along the U.S-Mexico border. Along the border, there are 14 paired border cities which are growing rapidly on fertile agricultural lands. There is a real demand for water along these cities and the agricultural lands. Drylands Institute (2012) addresses water in the south as a 'blue gold'. The need of the water affects politics and environmental policy along the border. This project aims at cooperation and sharing of resources for integration. To make the cities and agricultural lands to use river sources reasonably after a political agreement, the project analyzes the border region in terms of their needs of water. The interventions of the projects are to cover both the region, agricultural lands, and the border cities. The project analyzes seven types of current water issue on the border-crossing points and proposes solutions for building/mezzo, city and regional scales for them (see: Figure 44-45). The project proposes water diversion, storage and remediation systems with new water storage technologies (see: Figure 46).

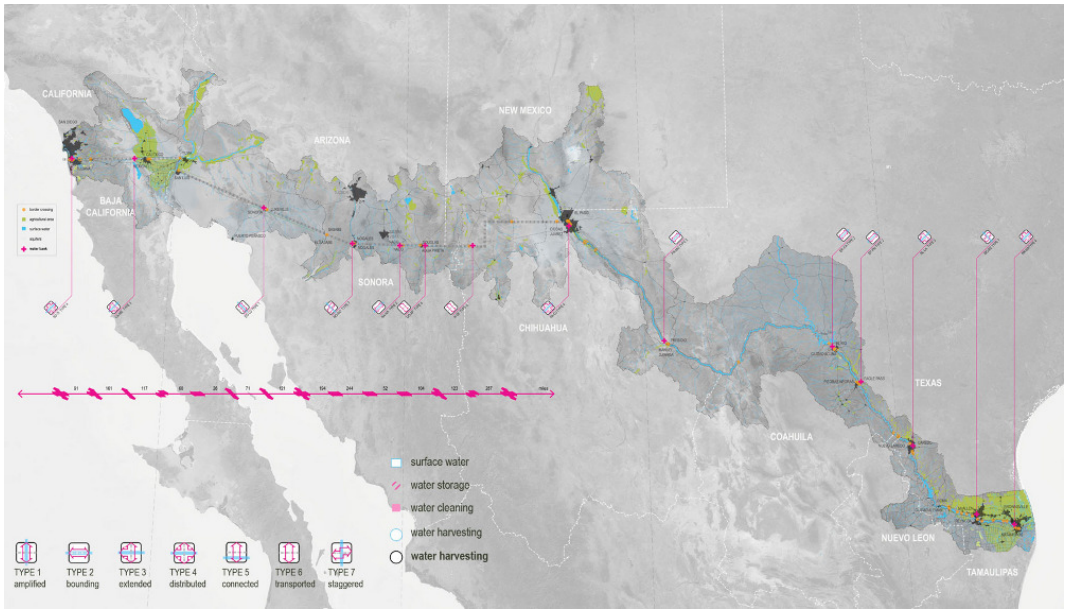


Figure 44. A survey of water, urbanism, and agriculture along the border (Source: Drylands Institute, 2012)

Figure 45. Site typologies reveal the relationship between border and water – the border expands to include a Water-Share Zone (WSZ) – areas in pink indicates the sites of intervention- (Source: Drylands Institute, 2012)

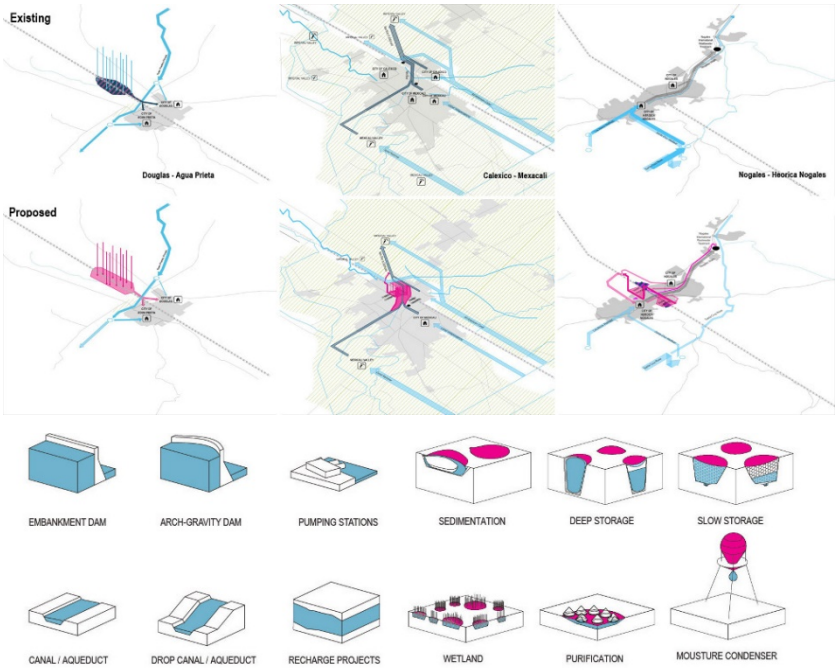


Figure 46. Existing and proposed water diversion, storage and remediation systems (above), inventory of existing and proposed water storage technologies (below) (Source: Drylands Institute, 2012)

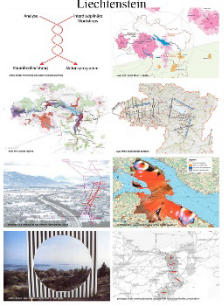
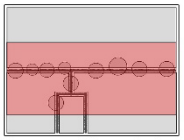
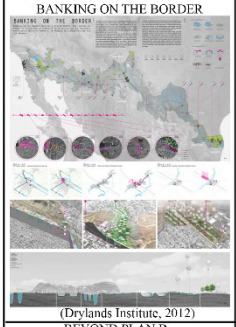
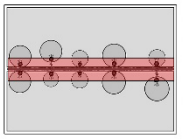
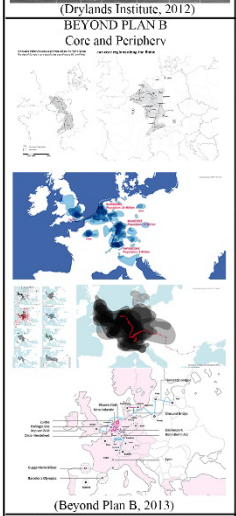
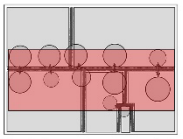
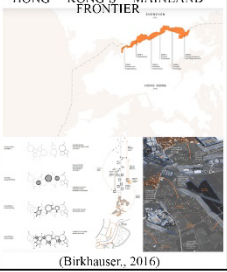
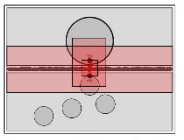
Though the interventions of the projects are on a building scale, they affect the whole region. That is why this project is examined within the context of the frontier, and this is the most robust feature of the proposal. Banking on the Border project will be the first legible step for both the collective and individual actions along the border trying to generate new landscapes, new public realms and new sites of economic exchanges.

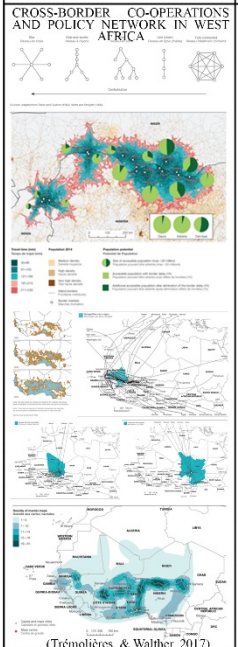
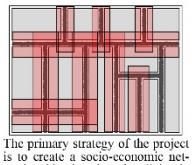
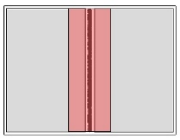
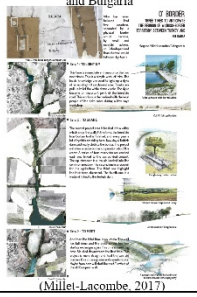
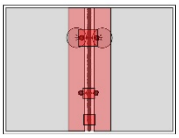
Within the context of the frontier, 7 projects are reviewed in 0. Their themes, design strategies, and the tactics are specified to compose a general perspective about the current design typology.

On a regional scale, projects cover either a frontier between two countries or a border region between several nation-states. These projects generally focus on the regional ecological, economic or social problems, and provide integrated solutions.

The design interventions in these projects are generally on building/mezzo scales, but the strategic solutions affect the whole frontier, border region or countries. With these interventions, the projects aim for the equally developed and socially integrated border condition.

Table 18. The typological review of selected urban design projects in the context of the frontier on a regional scale

TITLE OF THE PROJECT	AUTHOR OF THE PROJECT	YEAR OF THE PROJECT	AREA OF THE PROJECT	CONTEXT OF THE PROJECT	THEME OF THE PROJECT	PROPOSED DESIGN STRATEGY	PROPOSED DESIGN TACTICS
BORDER SPACE AND SPACE OF OPPORTUNITIES Germany-Austria-Switzerland-Liechtenstein  (Güller, 2004-2006)	Client: DACH+ (an Interreg IIIA project) Team: Güller Güller architecture urbanism	2006	GERMANY AUSTRIA SWITZERLAND LIECHTENSTEIN BORDER	ON THE FRONTIER AT REGIONAL SCALE	The project is an action-plan with prototypical concrete plans to be launched by the regional planning authorities on three distinct levels: the DACH+ space as a whole, the border regions, and local project areas.	 The strategy of the project is to create more active regional approaches instead of the monitoring system.	The project contains cross-border monitoring and action-oriented planning. Prototype one considers making the city network visible. Prototype two contains concepts and visions for the border regions and also diversifications of actions in rural areas. Prototype three produce beneficial conditions for local-cross-border co-operations.
BANKING ON THE BORDER  (Drylands Institute, 2012)	Project Team: Lateral Office Lola Sheppard, Mason White, Virginia Fernandez, Samantha Oswald	2011	U.S-MEXICO BORDER	ON THE FRONTIER AT REGIONAL SCALE	This project is a proposal of the water, urbanism, agriculture and a regional study along the U.S-Mexico border.	 The primary strategy of the project is to provide the cooperation and sharing of resources with integration.	Beyond merely storing new water sources, The project asserts that making water legible. The project proposes water diversion, storage and remediation systems with new water storage technologies with conservation while producing new landscapes, new public realms, and new sites of economic exchange.
BEYOND PLAN B Core and Periphery  (Beyond Plan B, 2013)	Beyond Plan B	2013	RHINE RIVER BORDER REGION	ON THE FRONTIER AT REGIONAL SCALE	The project examines everything as either core or periphery. A "scaleless' and 'endless' principle." Within this project, three significant cores appear along the Rhine River: The Euro-Core in the delta (focus=trade), The Main-Core in the middle (focus=production), The Swiss-Core at the Rhine's origin (focus=trade & production). The projects which will be produced for the region of the Rhine River has to be aiming 3 targets which are resilience, competitiveness, and sustainability.	 The fundamental strategy of the project is to analyzed the main projects on the Rhsine River to study on the border region.	Under this programs, some projects are produced and analyzed. Five fundamental objectives are identified: connecting, optimizations, (re)programming, (new)centrality and the initial impulse to analyzed the projects.
BORDER ECOLOGIES HONG KONG'S MAINLAND FRONTIER  (Birkhauser., 2016)	Joshua Bolchover, Peter Hasdell	2016	CHINA - HONG KONG BORDER	ON THE FRONTIER AT REGIONAL SCALE	The concept is rooted in the long history of places where frontiers meet cities where cultures both conflict and combination.	 The strategy of the project is to strengthen the relationship between the Hong Kong and China along the border region, border cities and the crossing facilities.	*This project takes into consideration the overall understanding of the macro flow and dynamics of the border region, its different habitats, its developed areas and settlements patterns, its morphologies and land-uses, as well as its social structures, the local economy, and cultural patterns* (Birkhauser, 2016).

TITLE OF THE PROJECT	AUTHOR OF THE PROJECT	YEAR OF THE PROJECT	AREA OF THE PROJECT	CONTEXT OF THE PROJECT	THEME OF THE PROJECT	PROPOSED DESIGN STRATEGY	PROPOSED DESIGN TACTICS
CROSS-BORDER CO-OPERATIONS AND POLICY NETWORK IN WEST AFRICA  (Trémolières, & Walther, 2017)	**The Book of WEST AFRICAN STUDIES**	2017	WEST AFRICA BORDER REGIONS	ON THE FRONTIER AT REGIONAL SCALE	*"The report contains innovative analyses of the co-operation potential of West African regions, the structure of its cross-border policy networks, and the spatial vision of its political actors. Collectively, these analyses enrich the readers understanding of the vital role border areas have in contributing to the regional integration process"* (Trémolières, & Walther, 2017).	 The primary strategy of the project is to create a socio-economic network with place-based policies in West Africa.	*The interventions in the reports are as follows:* *-Bridging the gap between research and policy in West Africa* *-Regionalism, regional integration and regionalisartion in West Africa* *-Social network analysis and network typologies* *-Mapping the co-operation potentials in West Africa* *-West African cross-border policy network and spatialization of the informati network by region* *-Spatial representations mantal maps and co-operation potentials in West Africa"* (Trémolières, & Walther, 2017)
THE KOREAN BLUE NEUTRALIZED ZONE  (Frearson, 2017)	**Soyoun Kim**	2017	DEMILITARIZED ZONE DMZ BETWEEN NORTH - SOUTH KOREA	ON THE FRONTIER AT REGIONAL SCALE	The project supports more intercommunication between the citizens of North Korea and South Korea, by creating a series of architectural structures along the border.	 The strategy of the project is to create a permeable, attractive and integrative frontier.	*"The project envisions a series of 25 different buildings and monuments* ***(safari, hair salon, monument, original Panmunjom, swimming pool, hotel, cafe&restaurant, mall, memorial hall, lecture hall, gallery, club, shelter, playground, pavilion, square, bridge, religious space, theatre, rest area, shrine, stadium, amusement park)*** *being erected between the rival countries. Each one would form a "neutral zone", where citizens from both sides of the border could meet and communicate. The project has also created a fictional travel agency to encourage visits. These would help to redefine the relationship between South and North Korea as a harmonious co-existence, possibly even paving the way for unity,"* (Frearson, 2017)
O'BORDER Three Times to Anticipate the Reunion of a Cross-Border Territory between Turkey and Bulgaria  (Millet-Lacombe, 2017)	Mégane Millet Lacombe	2017	TURKEY - BULGARIA BORDER	ON THE FRONTIER AT REGIONAL SCALE	The project starts with two approaches. The water, sources of the territory and the Eurovelo project which is a bicycle lane on the development and will follow a cross-border path along the ancient Iron Curtain. Three project areas have been determined. All connected to the water and also to the border.	 The project is produced to heal and to join along the frontier.	To light up: is a pure work of trim. The locals' knowledge is used to light up a barrier of an existing hill catchment area. The dike becomes an essential point of the EuroVelo road. The local people of both sides could realize this work during a few days workshop To share: The second project area is located in a valley which crosses the wall. The project will allow cross-border cooperation about the water. To meet: The wall has a fall done, and the cross-border territory starts its exchanges again. This project is more design and heals the two old borders. It is a crossing point and a symbolic site.

5.2. Concluding Remarks

In the current chapter of the study, the comprehensive review aimed not only for revealing the design interventions responding to the border condition but also for learning special morphology of the border condition itself from the design precedents. Since the different projects are conducted in different contexts (of border condition) the comprehensive critical review enabled the research to derive the intrinsic qualities of the spatial/morphological characteristics of the border condition. In this context, one could argue that there is no single boundary condition but different conditions which require various sets of urbanistic interventions from different strategic perspectives.

CHAPTER 6

CONCLUSION

Until the current part of the study, first, the three critical notions on the issue, *boundary, border,* and *frontier* have been examined to end up the prevailing confusion on the spatial connotations of the special terminology of border condition, in general. After clarifying the spatial contents of the notions regarding their etymology and the historical background, typology of the boundary and the border cities have been discussed on a theoretical basis. Regarding these typological divisions, an international panorama on 'paired border cities', which is the central issue of the research, have been suggested to specify the contemporary urbanistic (social and political) problems of the border condition in real. After the literature review and the comprehensive analyses of the international boundaries and border cities in the World, the fundamental notions (boundary, border, and frontier) have been revisited to investigate the current practice of urban design on border condition different contexts by examining the enduring design approach on the issue, accordingly.

In the light of the critical review based on the conceptual discussion and the typological research presented above, there are mainly three concluding statements to be argued, as follows:

The first problem specified with the review is that the current urban design practice does not apparently respond to the complexity of the border conditions, properly. Since there are three concepts embedded in the definition of border condition, each concept actually corresponds to the specific contexts which have to be tackled by a specific set of design strategies and type of interventions, accordingly. This is mainly important to come up with practical solutions to the disputes on the border from a spatial perspective. Each context has their special features to deal with, and all of them are interrelated with each other regarding the intrinsic social, spatial, economic and political dimensions of the problematique.

The second remark is about the lack of the social dimension of the border condition to be involved in spatial planning and design. In many design projects, consideration of social dynamics is insufficient to the early phase of analysis. However, at the stage of decision making, the socio-political dimensions generally lose its expected role in design. The proposed design solutions rarely give direct reference to the specific socio-political context.

Finally, it is possible to make a conclusion about the nature of design thinking in urban design on the issue, the border condition. The examined projects generally fall into the category of concept design projects. Most of them are intended to suggest a kind of political manifestation on the issue. They mainly provide an urbanistic perspective to the macro (international) political problem. In this regard, they rarely have consideration on implementation in real. The projects basically give a chance for defining an overall the design approaches on socio-political issues. Somehow, one could take it normal not provide an implementable and 'realistic' design solutions within the projects suggested for border conditions, since the 'solution' for a big socio-political problem such as international conflicts on the borders is hard to be tacked spatially, which is the major domain of urbanism. Nevertheless, it is crucial to combine political approach with the operational perspective of urbanism for more effective practice on the issue.

As it is seen in these three critical obstacles, there is a need for a ***systematic*** and ***holistic*** framework that would condition a better design practice in urbanism. The proposed framework does basically aim for an urbanistic view on border condition that would have higher strategic capacity in the context of paired border cities. The proposed approach should be systematic as it has to handle all the components in a relational framework. It should be able to produce systemic solutions at both strategic and tactical levels and be able to look at the genuine conditions of the context. Moreover, the required system approach has to be operational enough for everyone to interpret differently in similar problematic contexts. The approach also should be holistic as it can combine all the key components, *boundary*, *border*, and *frontier* discussed so far. The holistic perspective should be able to handle a broader scalar spectrum by integrating micro and macro aspects on a single basis. Last but not least, holism

suggested for a new approach has to embrace the all the dimensions of the big issue, economics, sociology, geography and politics of border condition in the context of paired border cities.

In the next part of the study in the light of these results, a strategic framework for the urbanism of border conditions is presented.

6.1. Towards a Strategic Framework for Urbanism on Border Condition

The critical review of the contemporary urban design on the enduring approach to deal with the problem of border condition has revealed that there is a real need to suggest a strategic framework for an effective urbanistic perspective to the problematic issue of border condition. The intended model framework, which is proposed in the following tables, cover all the major components of the border condition discussed at the beginning of the thesis (Chapter 2), the specific real problems revealed in the world panorama (Chapter 4), and covers all the critical interventions and tactics specified in the comprehensive review of urban design projects (Chapter 5) , accordingly.

The general problems which are observed along the borders, the primary strategies and design tactics with the aims and the operations to solve the problems are demonstrated in Table 19, 20 and 21 regarding the context of the *boundary, border* and *the frontier*, respectively.

In the context of the ***boundary***, the problems are generally about the artificial boundary elements and their impacts on the social segregation. The problematic conditions along the boundaries can be grouped under two categories. First one is **spatial problems** which contain any types of problematic issues on physical environment of the border condition. Some of the spatial problems along the boundary are as follows:

- useless, impermeable, aggressive boundaries that distorts spatial integrity
- strong, detrimental fortification components

- weakly associated spatiality
- dividing, impermeable barriers
- limited, inefficient and separative border structures
- impermeable check points
- weak connections and relations on the border ports
- lack of open spaces along the boundary and empty borderlands

The second one is **social problems** on the boundary, some of them are exemplified as follows:

- socially separating limits
- obstacles to social integration of the public
- lack of socialization, meeting and shared places
- long waiting times
- lack of public safety
- complexity and confusion along the boundary
- housing, working, waiting problems of refugees

The design strategies, therefore, aim to change the separative perception of the boundary with socio-spatial coherence. Focal points and shared, public places along the boundary are created to increase the awareness of the different societies to each other and to form spatial integrative places along the boundary. Moreover, the design tactics and interventions on the context of the boundary provide intercommunicated neighbors while building effective and efficient border places with more spatial integrations (see: Table 19).

In the context of the ***border***, the problems generally focus on the city scale. Integration problems of paired border cities occur, and the strategies focus on these problems.

These integration problems occur again in both spatial and social context but at city scales. First of all **spatial integration problems** are listed as follow:

- disconnection and lack of public spaces interface of the paired border cities
- dividing, impermeable borders
- disconnectedness of the continuity between both sides of the cities
- non-useful pedestrian routes and bicycle networks
- inefficient public transportation systems between two neighboring cities
- long journey times between paired border cities
- two cities developed separately within same geography
- lack of integrative urban development plans and infrastructure systems

The **social integration problems** in the context of the border are:

- disintegration of the societies
- obstacles to social integration
- lack of socialization and meeting places
- need for more transition and shared places
- long waiting times on the border ports
- lack of social coherence

Due to these problematic conditions design strategies and design tactics concentrate on building integrative and connective urbanistic systems between the paired border cities, with comprehensive united development plans (see: Table 20).

In the context of the ***frontier***, the problems are mainly on economic development and regional integration. The frontier cover more regional lands between the two neighboring countries. Therefore, the problematic conditions on the context of the

frontier could be grouped under three categories; **economic & political problems, spatial problems** and **social problems.** The **economic and political problems** are:

- social exclusion due to the political conflict
- totally closed, impermeable frontiers
- political frontiers without continuity
- lack of regional economic development
- unawareness of similar problems
- lack of universal integration
- harmful effects of globalization on local -the economic depression of developing and undeveloped countries with the socio-spatial disintegration

The **spatial problems** which generally cover all the border region between two states are as follows:

- weak spatial integration of the neighboring countries
- dividing, impermeable frontiers
- dysfunctional, useless no man's lands
- irrelevant utilizations and disconnectedness
- spatial segregation along the frontiers
- lack of intercity transportation systems
- lack of connectivity between the frontier settlements

The **social problems** are generally the same with the context of the boundary and the border. They are:

- the disintegration of the societies

- housing, waiting working problems of refugees
- obstacles to social integration
- social segregation along the frontiers
- socially exclusive communities
- long journey times between paired border cities

Because of these problematic conditions of the frontier the design interventions aim to create socio-economic networks between the neighboring countries for the efficacy of the regional economy in the context of social coherence. (see: Table 21)

Table 19. The operational framework for the urbanistic perspective on border condition in the context of boundary

URBANISTIC INTERVENTIONS ON THE BOUNDARY *AT BUILDING/MEZZO SCALE*

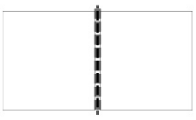
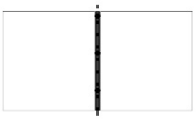
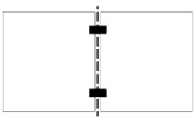
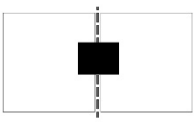
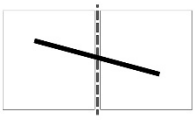
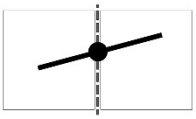
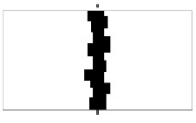
PROBLEMATIC CONDITIONS	AIMS AND OBJECTIVES	DESIGN STRATEGIES	DESIGN TACTICS
-useless, impermeable boundaries -strong, detrimental fortification components -weakly associated spatiality -obstracting integrations	-changing the separative perception of the boundary -providing functionality to non-interfering boundaries due to the political conditions -increasing the awareness and knowledges of different societies to each other	 **metamorphosis:** both the functions and the characteristics of the boundary between paired border cities change to different usage.	-transforming the boundary into an infrastructure system -creating rebellion monuments to the remembrance of the collective memory -increasing permeability of the boundary with using porous elements
-dividing, impermeable barriers -socially separating limits -boundary that distorts spatial integrity -obstacles to social integration	-creating an integrator road instead of the separator one as an edge. -providing opportunities for citizens on both sides of the border to meet each other. -facilitating the transportation within a city and between paired border cities	 **transmutation:** dividing street transform into the bi-national road.	-transforming a useless road to a functional path that different communities use together. -building a public transportation system that feeds both sides of the boundary. -creating stations of a public transportation system as a meeting places
-lack of socialization and meeting places -limited border crossing structures -impermeable checkpoints -need for more transition and shared places -weak connection ports	-building not just shared structures but integrative communities -providing various activities for both sides of the citizens to meet each other. -facilitating the border-crossing activities with more spatial integrations	 **foci:** several focal nodes are placed on boundary.	-building not just shared structures but integrative communities -providing various activities for both sides of the citizens to meet each other. -facilitating the border-crossing activities with more spatial integrations
-long waiting times -lack of public safety -impermeable checkpoints -weak relations on the border ports	-building effective and efficient border ports tp provide intercommunicated neighbors -providing opportunities to meet for both sides of the citizens and the visitors -facilitating the border-crossing activities with more spatial integrations	 **focus:** one focal node is placed on boundary.	-creating border-crossing facility with modern interventions -transforming empty borderlands to new focal point with mixed usage -increasing quality of border ports and boundary lands for citizens and visitors
-inefficient border buildings -lack of open spaces on the boundary -impermeable, aggressive boundaries	-creating socially-inclusive and heterarchical communities -providing opportunities to meet for both sides of the citizens and the visitors -increasing bi-nationality of the boundaries	 **fascia:** a connecting link cross boundary.	-changing shapes of border ports into a linear public spaces -creating open spaces with local green species -enlarging border places as a crossing line with different land-use decisions
-inefficient border buildings -lack of open spaces on the boundary -impermeable, aggressive boundaries -weak integration spaces	-changing shapes of border ports into a linear public spaces with a square -creating open and gathering spaces with greenery -building cultural, social, shared facilities instead of border ports	 **swelling:** a connecting link with a node.	-creating socially-inclusive and heterarchical socities -providing opportunities to meet for both sides of the citizens and the visitors -increasing cultural coherence between separated communities
-inefficient border buildings -complexity and confusion along the boundary -separative structures -weak social integration of the public	-harmonizing the separated collective memories of the communities -strengthening relationships between both sides of the citizens and the visitors -creating unity among the citizens against similar problems	 **mixing:** mixed used structures are placed on boundary.	-creating public buildings along the boundary -placing various gathering structures -building cultural, social, shared facilities that are visiting from both sides of the boundaries -generating efficient facilities for visitors along the boundary to increase the use of the border
-dysfunctional, useless, empty borderlands -dividing elements along the boundary -impermeable strong fortifications -housing, working, waiting problems of refugees	-harmonizing the separated communities with each other and the refugees -strengthening social coherence -creating breathtaking, shared, workspaces and bring them to use by refugees with citizens	 **allman's land:** transforming the noman's land into allman's land.	-providing urban parks along the noman's lands -creating housing and working spaces for the refugees -changing useless noman's lands into open, public, waiting spaces

Table 20. The operational framework for the urbanistic perspective on border condition in the context of border

URBANISTIC INTERVENTIONS ON THE BORDER *AT CITY SCALE*

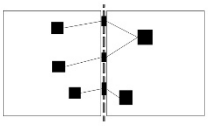
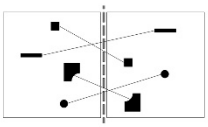
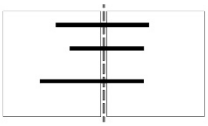
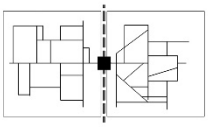
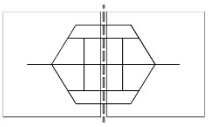
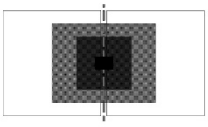
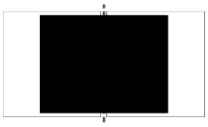
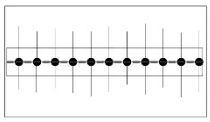
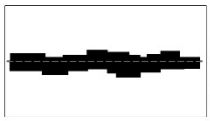
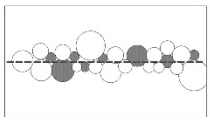
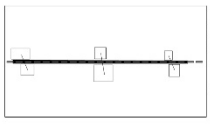
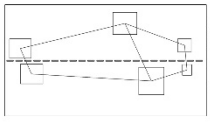
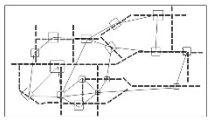
PROBLEMATIC CONDITIONS	AIMS AND OBJECTIVES	DESIGN STRATEGIES	DESIGN TACTICS
-disintegration of the societies -disconnection of two cities -lack of public spaces -weak spatial integration of the cities	-changing the separative perception of the border into connectivity -providing functionality to non-interfering border structures with connection -increasing the social coherence between the separated community and the visitors	 **consolidator:** a way of interlocking the common places in a dynamic way.	-transforming the border buildings into shared places -creating connections between public spaces through the border -connecting societies through public places -interlocking the urban areas for visitors
-dividing, impermeable borders -difficulties in the urban space -disconnectedness of the continuity between both sides of the cities -obstacles to social integration	-increasing the integration of the communities -providing the mutual understanding of the different social groups -facilitating the daily life of the border people and visitors	 **marriage:** another version of a consolidator, same used areas interlocking with each other in a connecting way.	-connecting the similar urban spaces -creating tourism routes between two sides of the cities to connect according to needs of the citizens and the visitors -combining the places that citizens need with the interventions that facilitate daily life
-lack of socialization and meeting places -limited border crossing structures -weak connections between two cities -need for more transition and shared places	-providing socio-spatial integration -reducing the impact of the strong border fortifications on the citizens -facilitating the border-crossing activities with more social coherence	 **stitching:** creating a connection lines to mach the paired border cities.	-designing the roads with continuity -placing greenry lines between two sides of the boundaries -providing shared, meeting, public and open places for both sides of the citizens
-non-usefull pedestrian routes -lack of bicycle network -long waiting times on the border ports	-building effective and efficient border ports -providing a holistic circulation network within and between both sides of the cities -facilitating the border-crossing activities with more spatial integrations	 **network-connection:** connecting two sides of the boundary through the border port.	-creating integrative public transportation sytems -combining public transportation systems through the border -providing transfer centers along the transportation systems with shared, open spaces
-inefficient public transportation systems -lack of connectivity between the cities -impermeable borders -long journey times between paired border cities	-providing spatial integration -building a holistic network that allows the citizens and the visitors to travel efficiently -decreasing the long journey and waiting times	 **plexus:** one, united network covers paired border cities.	-changing shapes of border ports into a linear public spaces -creating open spaces with local green species -enlarging border places as a crossing line with different land-use decisions
-two cities developed separately -lack of urban integration -lack of social coherence -two different infrastructural systems	-harmonizing the separated societies under the same plans -providing opportunities to meet for both sides of the citizens and the visitors -increasing cultural coherence between segregated communities	 **hierarchy:** total integration of the paired border cities.	-building efficient and effective border ports -connecting both sides of the neighborhoods with united plans -creating united urban infrastructre systems -planning two dividing cities as a united city
-inefficient urban development plans -complexity and confusion within and between the urban lands -weak social and spatial integration -two different cities which are constructed differently in every respect	-creating more economical and sustainable cities with holistic approaches -strengthening relationships between both sides of the citizens -building unity among the citizens against similar problems	 **uniting:** two cities of two sides of the boundary become one united city in every respect.	-developing one master plan under one vision; a joint tourism based, rural-based, sustainable-smart city, etc. -integrating the shared interests in economically -creating united, pedestrian, bicycle, public transportation routes -designing new border city against the existing

Table 21. The operational framework for the urbanistic perspective on border condition in the context of frontier

URBANISTIC INTERVENTIONS ON THE FRONTIER *AT REGIONAL SCALE*

PROBLEMATIC CONDITIONS	AIMS AND OBJECTIVES	DESIGN STRATEGIES	DESIGN TACTICS
-the disintegration of the societies -social exclusion due to the political conflict -totally closed, impermeable frontiers -weak spatial integration of the neighboring countries	-reducing negative impacts of the buffer zones between two nation-states -providing functionality to non-interfering frontiers -harmonizing the separated collective memories of the communities with spatial and economic unification	 **plane of foci:** to reduce the impact of the buffer zone mnemonic symbols are placed and the resources are used efficiently on the frontiers.	-placing mnemonic symbols along the frontiers -creating connecting links through the focal points -developing systems to provide efficient use of agricultural and urban resources -connecting historical and memorial spaces
-dividing, impermeable frontiers -disfunctional, useless noman's lands -housing, waiting working problems of refugees -obstacles to social integration	-harmonizing the separated societies also with the refugees -providing economic unification for the efficiency of the regional economy -strengthening social coherence with production, open, green spaces	 **allman's space:** another way of giving functions to noman's land but in regional level.	-creating regional parks open to everyone -conserving the natural spaces for all species -providing production spaces along the frontiers -providing an environment for improving the economic activities
-political frontiers without continuity -irrelavent utilizations and disconnectedness -lack of regional economic development -social and spatial segragation along the frontiers	-providing socio-spatial integration -strengthening the relationships between the countries along the frontiers, cities and border crossing facilities -creating productive border people by solving the daily life problems on the border	 **infill:** a new functional areas are created within diferrent natural lands to connect them and give feeling of continuity.	-providing integration of the urban agricultural areas with each other -creating new crossing lands with harmony -increasing production spaces along the frontiers -developing regional-sustainable plans
-weak relations along the frontiers -lack of intercity transportation systems -unawareness of similar problems -disconnectedness of border regions	-building effective and efficient border ports -providing socially integrated communities -harmonizing neighboring cities and the countries	 **through-connection:** new systems to connect the paired border cities along the boundary.	-creating integrative public transportation sytems along the frontier -providing permeable frontiers with new stations on the border ports -integration of existing railway lines through the boundary
-lack of connectivity between the frontier settlements -socially exclusive communities -long journey times between paired border cities	-providing spatial and cultural integration -building a holistic network that allows the citizens and the visitors to travel efficiently -decreasing the long journey and waiting times -developing regional economy by connecting the cities	 **cross-connection:** roads are used as a linkage between the border cities on the frontier.	-integration of railway lines while connecting the neighboring settlements within the frontiers -transformin the whole road network between two neigboring countries -adding the new transportation systems to touristic routes
-lack of universal integration -harmful effects of globalization on local -the economic depression of developing and undeveloped countries with the socio-spatial disintegration	-providing local development -harmonizing the different nations and the cultures for the efficiency of the regional economy -increasing cultural coherence between neighboring countries	 **weaving:** connecting countiries through paired border cities.	-creating socio-economic network -establishing political, integration strategies that will enable undeveloped or developing countries to open up to the world -bringing out the awareness of the border cities and making them a place of attraction for the visitors

Even though all the design interventions (in Table 19, 20 and 21) generalized after the comprehensive critical review have specific nature in themselves, their primary common feature is to associate the means and ends of the given problem in a strategic perspective. The urbanistic interventions typified in the proposed framework are to be selected after a systematic analysis of any given context along with the significant socio-political motivations and objectives. Then the particular interventions as key design tactics have to be specified, accordingly.

Besides their common features the strategies, in this context, can be categorized under four typological groups, as follows:

In this framework, the so-called ***relational strategies***, on the one hand, can be used to connect two sides of the borders via interlocking the common places or creating the links (see: Figure 47).

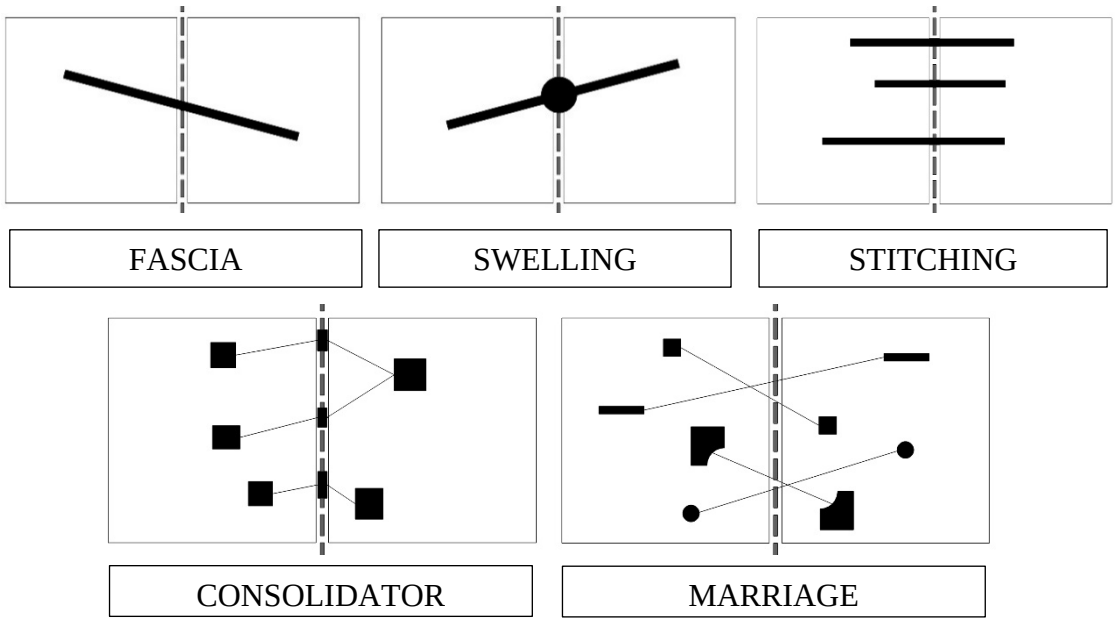


Figure 47. Relational strategies

Relational strategies can be utilized in certain socio-politic contexts in which border typologies also take their shapes. For open or controlled boundaries with their artificial or natural elements are investigated their particular needs with these relational strategies. For example, stitching can be operated on open with natural boundaries which have limited uniting links. As it is problematized in Chapter 4, Type-1, 2 and 3 are the examples of these typological paired border cities, (open and natural

boundaries with one connection). Creating new connections in those cities leads to interlock the socio-political condition of two neighboring states with spatiality of the border condition between those countries. On the other hand, this strategy can be utilized on controlled and artificial boundaries with the different context. For example, as it is mentioned in Chapter 4, Type 10, 11 and 12 artificial elements like wall, wire fences or another fortification components hinder the flow of people and cause the political crises between the citizens and the states. However, creating several stitching links over the fortifications helps to design areas to breathe, and form more trouble-free situations in the flow of people. Consolidator and marriage can also be a strategy for both open and controlled boundaries. While building and connecting common public buildings on open borders with integrated political systems on open paired border cities, on controlled boundaries, placing public buildings along the boundary leads to the integration of social segregation of two sides of the boundary. Moreover, forming tourism routes through places to visit and matching them for visitors to help in the holistic urban system, economically and depending on this from a politically.

Network strategies, on the other hand, are used to be utilized for creating an efficient and effective network between two sides of the border to integrate paired border cities, or two or more neighboring countries (see: Figure 48).

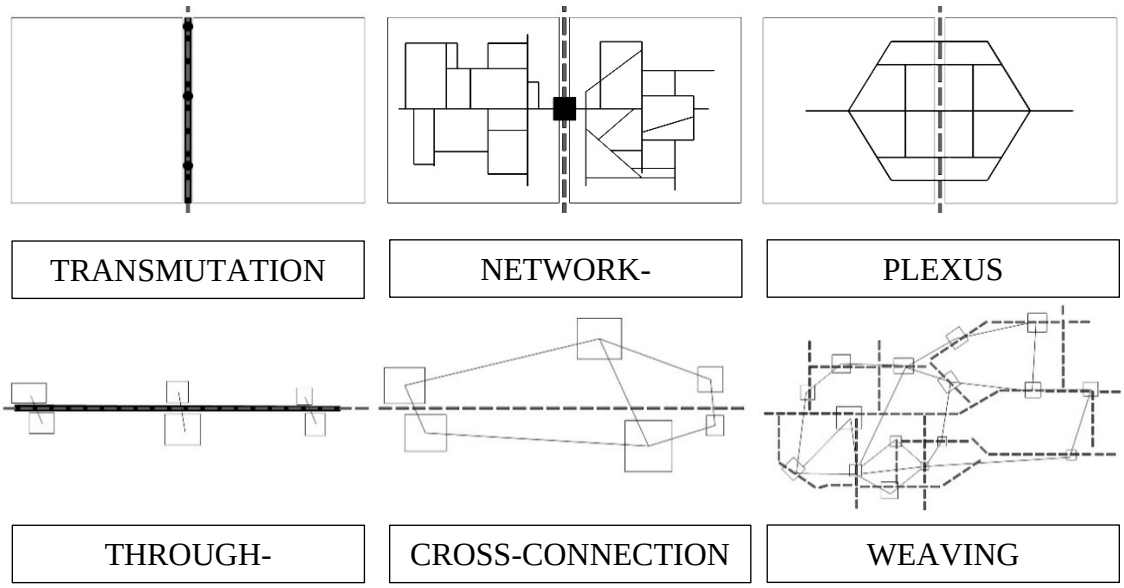


Figure 48. Network strategies

Network strategies play a major role in ensuring spatial integration, while at the same time being able to provide to holistic interventions in the socio-political context. With the strategy of the *network,* several border cities on the neighboring countries which are located in the same region are connected to each other. This integration leads to the countries to develop economically, socially and internationally. Creating unity in the region is to help each country to use its own potentials, and reduce its dependency on the outside and this is one of the most significant steps taken against development in the undeveloped countries. All other *network strategies* help to systematic and holistic approaches for border cities. Integrating pedestrian routes, public transportation systems, intercity or international railways can be practiced on open, controlled or closed boundaries. These systems can produce such solutions on border politically sensitive conditions, which would eliminate the obstacles to integration.

Thirdly, the ***focal strategies*** aim to connect two sides through single or multiple focused interventions by creating nodal functional transformations, mixing usage or adopting new elements along the border (see: Figure 49).

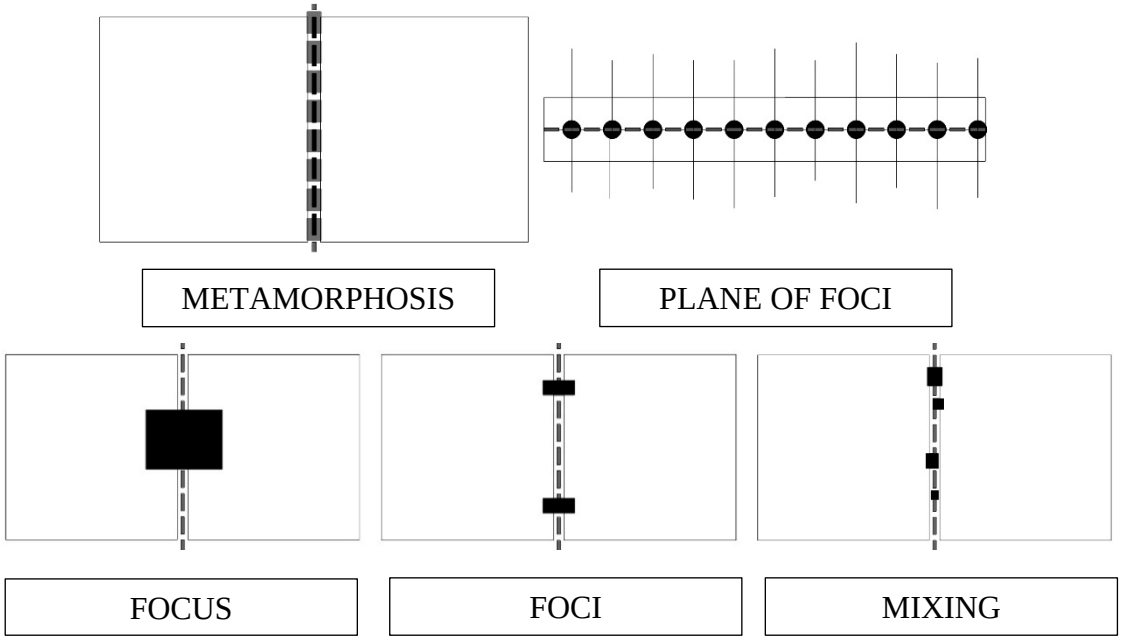


Figure 49. Focal strategies

Focal strategies can be operated to integrate the paired border cities or border regions in the socio-politic context more readily. Few interventions along the boundary are enough to handle the social segregations with structural interferences. *Focal strategies*

allow remaining political stance of the neighboring countries while creating shared places along the border. Whether one focal node or multi-nodes can be utilized to create the holistic and systematic approaches in the socio-politic integration context with spatial interventions.

Finally, ***areal strategies***, focus on transforming the vacant border fields into actively used vital places to be operated as an interface between the two sides of the border condition. Unlike the other types of strategies, *areal strategies* are mainly operated on the city and regional scale in a holistic framework (see: Figure 50).

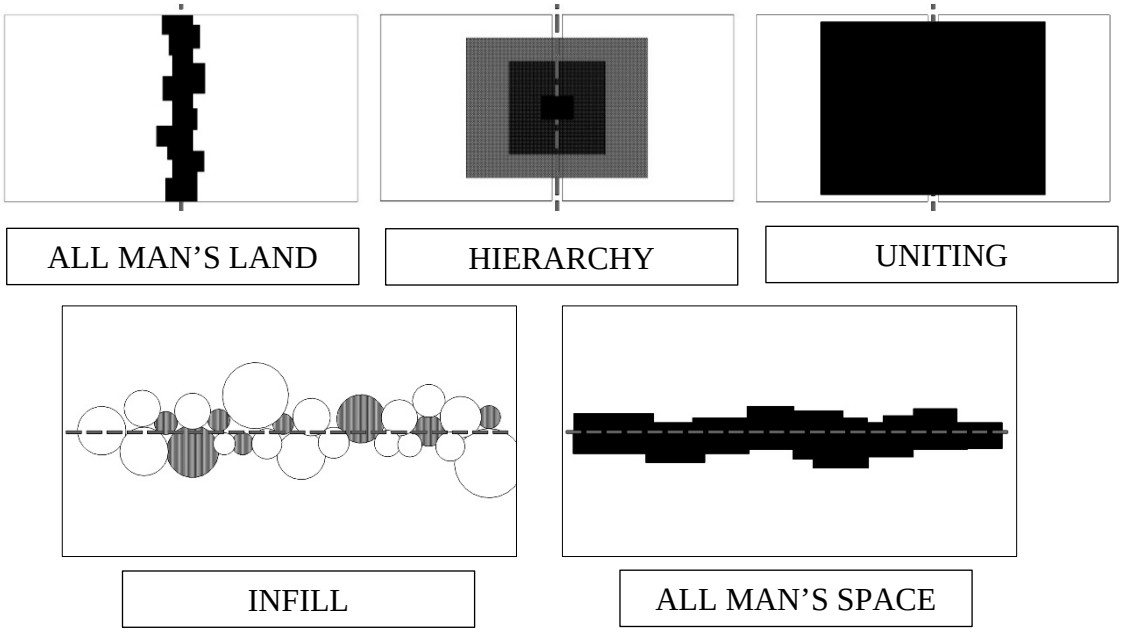


Figure 50. Areal strategies

Areal strategies are one of the major approaches to make two sides of the boundary united. The very first intervention can be used between border cities, or neighboring countries regardless of whether it is an open or closed boundary. Noman's lands are nonfunctional areas with opportunities. Changing these lands into integrative and open for everyone space with different usage in different scales helps the political integration of two countries on spatial context. Creating holistic planning approaches would ensure that the politically realized openness and integrity are also achieved in the socio-spatial context. At this point, the relational policies of the countries on the borders must also be integrated with the spatial policies.

The proposed strategic framework revisits the operational knowledge acquired from the comprehensive review of a large number of disjointed design practices on border condition. In this sense, it tends to learn from the practice itself. The integration of segregated communities and the cities is the primary challenge of urbanism in border condition. Despite the specificity of each certain context, each and every urban design interventions aims for providing new possibilities for better integration within the divided border conditions. This compilation, in this regard, is expected to present a systemic 'know-how' for further design studies in the search for more effective and sustainable strategies of socio-spatial integration within the paired border cities.

6.2. Further Research Questions

In the field of border studies, the notion of the boundary, border, and frontier have been a focused research area from the perspective of social and political sciences, geography, anthropology, history and international relations. However, in the field of urbanism, border conditions, international boundaries and the paired border cities have encountered relatively less interest in the spatial researches within the domain of urbanisms, so far. The current suggested research, in this regard, is to fill this gap in the literature while proposing an operational basis for design practice.

Further research can be conducted by focused case studies in the form of discussing specific contextual aspects to elaborate the proposed strategic view on a more concrete basis. In this sense, creating some generic design codes on different design research areas to tackle with the peculiar dynamics of the paired border cities in detail. The expected performance of the strategic framework on border conditions can be tested on these specific cases with their special socio-political dimensions.

Design guidelines in planning are produced thematically for different types of urban areas in practice. City centers, residential areas, industry regions or greenery lands are the application areas for those guidelines. Border cities and frontiers, in this regard, can be considered as another type of thematic areas for which specific types of design codes could be generated. Therefore, focused researches can be defined for writing guidelines in the light of the strategic framework proposed in the current study, as well.

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INTERVIEWS

Interview of Prof. Dr. H. Neşe Özgen, conducted on November 2015 at her lessons in Mimar Sinan Fin Arts University .

APPENDIX A

The List of the Paired Border Cities

NUMBER	GENERAL INFORMATIONS									TYPOLOGIES			CONTINENTS	TYPES
	BORDER CITY		COUNTARY		POPULATION					TYPOLOGY OF BOUNDARY		TYPOLOGY OF PAIRED BORDER CITY		
	FIRST CITY	SECOND CITY	FIRST STATE	SECOND STATE	FIRST POP.	YEAR	SECOND POP.	YEAR	TOTAL POP.	RELATIONS	COMPONENTS	FORMATION OF CITIES		
1	Malaba	Malaba	Kenya	Uganda	8.383	2018	18.224	2014	26.607	Open	Natural	Partitioned	Africa	TYPE 1
2	Pweto	Chiengi	Democratic Republic of the Congo	Zambia	26.647	2015	7.486	2010	34.133	Controlled	Artificial	Cross-Border Activity Dependent	Africa	TYPE 12
3	Sesheke	Katima Mulilo	Zambia	Namibia	19.850	2015	25.027	2018	44.877	Controlled	Natural	Duplicated	Africa	TYPE 8
4	Kye Ossi	Ebebiyin	Cameroon	Equatorial Guinea	17.117	2005	36.565	2012	53.682	Controlled	Artificial	Duplicated	Africa	TYPE 11
5	Dolo	Dolow	Ethiopia	Somali	33.300	2015	26.800	2014	60.100	Controlled	Natural	Duplicated	Africa	TYPE 8
6	Elubo	Noe	Ghana	Cote D'Ivaire	43.503	2010	27.938	2013	71.441	Controlled	Natural	Cross-Border Activity Dependent	Africa	TYPE 9
7	Moyale	Moyale	Kenya	Ethiopia	31.263	2015	42.600	2015	73.863	Controlled	Artificial	Partitioned	Africa	TYPE 10

18	17	16	15	14	13	12	11	10	9	8
Lome	Bangui	N'Djamena	Bukavu	Goma	Ceuta	Melilla	Tunduma	Mandera	Busia	Aneho
Afloa	Zongo	Kousseri	Cyangugu	Gsenyi	Finideq	Beni Ansar/Farkh	Nakonde	Beled Hawo	Busia	Grand Popo
Togo	Central African Repuplic	Chad	Democratic Republic of the Congo	Democratic Republic of the Congo	Spain	Spain	Tanzania	Kenya	Kenya	Togo
Ghana	Democratic Republic of the Congo	Cameroon	Rwanda	Rwanda	Morocco	Morocco	Zambia	Somali	Uganda	Benin
1.933.700	805.000	721.081	225.389	144.124	84.959	86.120	97.562	65.978	46.315	24.891
2017	2015	2018	2017	2017	2017	2017	2012	2015	2015	2010
66.546	33.634	89.123	63.833	83.623	77.436	67.582	41.836	73.000	55.958	57.636
2012	2015	2005	2018	2018	2014	2014	2010	2015	2014	2013
2.000.246	838.634	810.204	289.222	227.747	162.395	153.702	139.398	138.978	102.273	82.527
Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Open	Controlled
Natural	Natural	Natural	Natural	Artificial	Natural	Artificial	Artificial	Artificial	Artificial	Natural
Cross-Border Activity Dependent	Duplicated	Cross-Border Activity Dependent	Duplicated	Cross-Border Activity Dependent	Duplicated	Duplicated	Duplicated	Cross-Border Activity Dependent	Cross-Border Activity Dependent	Partitioned
Africa	Africa	Africa	Africa	Africa	Africa	Africa	Africa	Africa	Africa	Africa
TYPE 9	TYPE 8	TYPE 9	TYPE 8	TYPE 12	TYPE 8	TYPE 11	TYPE 11	TYPE 12	TYPE 6	TYPE 7

29	28	27	26	25	24	23	22	21	20	19
Zabaykalsk	Bahrani	Wiang Chiang	Uchkurgan	Akçakale	Vuodil	Tak Bai	Wandingsen	Zamyn Üüd	Padang Besar	Brazzaville
Manzhouli	Krishnanagar	Huoi Xai	Narny	Tell Abyad	Kadamjay/Pulgon	Kampung Telaga	Pang Hseng	Erenhot	Padang Besar	Kinshasa
Russia	India	Thailand	Uzbekistan	Turkey	Uzbekistan	Thailand	China	Mongolia	Thailand	Republic of the Congo
China	Nepal	Laos	Kyrgyzstan	Syria	Kyrgyzstan	Malaysia	Myanmar (Burma)	China	Malaysia	Democratic Republic of the Congo
11.769	14.492	13.417	31.500	27.516	30.000	19.415	13.906	17.519	16.034	1.696.392
2010	2011	2017	2005	2017	2016	2017	2010	2016	2017	2015
35.407	30.000	29.866	11.400	14.825	11.166	20.000	22.950	10.422	10.000	11.855.000
2010	2011	2015	2018	2004	2018	2000	2014	2010	2008	2017
47.176	44.492	43.283	42.900	42.341	41.166	39.415	36.856	27.941	26.034	13.551.392
Controlled	Open	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Artificial	Artificial	Natural	Natural	Artificial	Natural	Natural	Natural	Artificial	Natural	Natural
Duplicated	Cross-Border Activity Dependent	Cross-Border Activity Dependent	Partitioned	Partitioned	Partitioned	Cross-Border Activity Dependent	Cross-Border Activity Dependent	Cross-Border Activity Dependent	Partitioned	Duplicated
Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Africa
TYPE 11	TYPE 6	TYPE 9	TYPE 7	TYPE 10	TYPE 7	TYPE 9	TYPE 9	TYPE 12	TYPE 7	TYPE 8

40	39	38	37	36	35	34	33	32	31	30
Ceylanpınar	Astara	Keles (Taşkent)	Nakhon Phanom	Jaigaon	Dibba Al Hiyn / Dibba	Moreh	Su-ngai Kolok	Qorasuv	Sarakhs	Daluo Zhen
Ras al-Ayn	Astara	Saryagash	Thakhek	Phuntsholing	Dibba Al Baya	Tamu	Rantau Ponjang	Kara Suu	Serakhs	Mong La
Turkey	Azerbaijan	Uzbekistan	Thailand	India	United Arab Emirates	India	Thailand	Uzbekistan	Iran	China
Syria	Iran	Kazakhstan	Laos	Bhutan	Omman	Myanmar (Burma)	Malaysia	Kyrgyzstan	Turkmenistan	Myanmar (Burma)
48.050	20.643	31.026	26.337	42.254	6.402	16.847	41.457	32.948	42.179	26.770
2012	2008	2015	2017	2011	2010	2011	2017	2015	2016	2010
29.347	51.579	37.809	38.388	20.537	55.301	43.737	19.054	25.100	9.585	20.745
2004	2016	2018	2015	2005	2015	2014	2008	2018	2009	2010
77.397	72.222	68.835	64.725	62.791	61.703	60.584	60.511	58.048	51.764	47.515
Controlled	Controlled	Controlled	Controlled	Open	Open	Controlled	Controlled	Controlled	Controlled	Controlled
Artificial	Natural	Natural	Natural	Artificial	Artificial	Natural	Natural	Natural	Natural	Natural
Partitioned	Partitioned	Partitioned	Partitioned	Cross-Border Activity Dependent	Partitioned	Cross-Border Activity Dependent	Cross-Border Activity Dependent	Partitioned	Partitioned	Cross-Border Activity Dependent
Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia
TYPE 10	TYPE 7	TYPE 7	TYPE 7	TYPE 6	TYPE 4	TYPE 9	TYPE 9	TYPE 7	TYPE 7	TYPE 9

51	50	49	48	47	46	45	44	43	42	41
Raxaul	Myawaddy	Bangaon	Dongxing	Mukdahan	Lefkoşa	Hekou Zhen	Aranyaprathet	Tachileik	Gantiadi	Tokmok
Birgunj	Mae Sot	Benapole	Mong Chai	Savannokhet	Nicosia	Lao Cai	Krong Paoy Paet	Wiang Phang	Adler	Sortobe
India	Myanmar	India	China	Thailand	KKTC	China	Thailand	Myanmar	Georgia	Kyrgyzstan
Nepal	Thailand	Bangladesh	Vietnam	Laos	GKRC	Vietnam	Cambodia	Thailand	Russia	Kazakhstan
55.536	113.155	108.864	88.607	33.696	61.378	37.074	16.681	51.553	10.000	63.200
2011	2014	2011	2010	2017	2016	2010	2017	2014	2018	2018
139.068	63.826	36.524	48.986	91.684	55.014	76.836	89.549	48.859	76.534	14.600
2011	2017	2011	2009	2015	2016	2009	2008	2017	2010	2009
194.604	176.981	145.388	137.593	125.380	116.392	113.910	106.230	100.412	86.534	77.800
Open	Controlled	Open	Controlled	Controlled	Closed	Controlled	Controlled	Controlled	Controlled	Controlled
Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural
Cross-Border Activity Dependent	Duplicated	Cross-Border Activity Dependent	Cross-Border Activity Dependent	Partitioned	Partitioned	Cross-Border Activity Dependent	Duplicated	Cross-Border Activity Dependent	Duplicated	Partitioned
Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia
TYPE 3	TYPE 8	TYPE 3	TYPE 9	TYPE 7	TYPE 13	TYPE 9	TYPE 8	TYPE 9	TYPE 8	TYPE 7

62	61	60	59	58	57	56	55	54	53	52
Jerusalam	Si Chiang Mai/Tha Bo	Al Ain	Blagoveshchensk	Xo'jaobad	Nusaybin	Jogbani	Abu Kamal	Ruili	Changbai Zhen	Al Aqabah
Jerusalam	Vientiare	Al Buraimi	Heihe	Oš [Osh]	Al Qamışlı	Bratnagar	Al Qa'im	Muse	Hyesan	Eliat
Israel	Thailand	United Arab Emirates	Russia	Uzbekistan	Turkey	India	Syria	China	China	Jordan
Palestine	Laos	Omman	China	Kyrgyzstan	Syria	Nepal	Iraq	Myanmar (Burma)	North Korea	Israel
	24.818	496.205	224.419	86.600	70.571	39.281	66.589	140.000	32.050	148.398
	2017	2015	2017	2004	2017	2011	2008	2013	2010	2015
	620.157	60.174	147.042	260.000	184.231	204.949	150.000	74.313	173.412	50.702
2018	2015	2010	2010	2018	2004	2011	2008	2014	2008	2016
874.000	644.975	556.379	371.461	346.600	254.802	244.230	216.589	214.313	205.462	199.100
Closed	Controlled	Open	Controlled	Controlled	Controlled	Open	Controlled	Controlled	Controlled	Controlled
Artificial	Natural	Artificial	Natural	Natural	Artificial	Artificial	Artificial	Natural	Natural	Artificial
Partitioned	Duplicated	Partitioned	Partitioned	Partitioned	Duplicated	Partitioned	Duplicated	Partitioned	Cross-Border Activity Dependent	Partitioned
Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia
TYPE 16	TYPE 8	TYPE 4	TYPE 7	TYPE 7	TYPE 11	TYPE 4	TYPE 11	TYPE 7	TYPE 9	TYPE 10

73	72	71	70	69	68	67	66	65	64	63
Haparanda	Comines	Tui	Zittau	Simbach am Inn	Kiefersfeiden	Shenzhen	Xiangzhou	Jaohor Bahru	Yuanbao	Pasir Gudang
Tornio	Comines	Valença	Porajow/ Sieniawka	Braunau am Inn	Kufstein	Shueng Shui	Macau	North Region	Sinuiju	North East Region
Sweden	France	Spain	Germany	Germany	Germany	China	China	Malaysia	China	Malaysia
Finland	Belgium	Portugal	Poland	Austria	Austria	Hong Kong	Macao	Singapore	North Korea	Singapore
9.805	12.420	16.860	25.723	9.736	6.864	12.528.300	771.726	642.944	682.248	90.742
2017	2015	2017	2016	2016	2016	2017	2010	2000	2010	2000
21.939	18.102	13.437	2.500	16.217	18.726	259.942	650.900	543.360	334.031	889.300
2017	2017	2016	2000s	2016	2016	2016	2016	2017	2008	2017
31.744	30.522	30.297	28.223	25.953	25.590	12.788.242	1.422.626	1.186.304	1.016.279	980.042
Open	Open	Open	Open	Open	Open	Controlled	Controlled	Controlled	Controlled	Controlled
Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural
Duplicated	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned	Duplicated	Partitioned	Partitioned	Duplicated	Partitioned
Europe	Europe	Europe	Europe	Europe	Europe	Asia	Asia	Asia	Asia	Asia
TYPE 2	TYPE 1	TYPE 1	TYPE 1	TYPE 1	TYPE 1	TYPE 8	TYPE 7	TYPE 7	TYPE 8	TYPE 7

83	82	81	80	79	78	77	76	75	74
Komarom	Beausoleil	Gorizia	Sighetu Marmatiei	Rheinfelden	Mohyliv-Podilskyi	Esztergom	Kleinblittersdorf /	Oltenita	Guben
Komarno	Monaco	Nova Gorica	Solotvyno	Rheinfelden	Otaci / Calaraseuca /	Sturovo	Sarreguemines /	Tutrakan	Gubin
Hungary	France	Italy	Romania	Germany	Ukraine	Hungary	Germany	Romania	Germany
Slovakia	Monaco	Slovenia	Ukraine	Switzerland	Moldova	Slovakia	France	Bulgaria	Poland
19.272	13.625	34.453	37.640	32.756	31.674	29.768	11.053	26.356	17.471
2017	2015	2017	2011	2015	2015	2017	2016	2013	2016
34.190	37.550	13.102	8.791	13.337	10.877	10.465	24.972	9.503	16.778
2016	2017	2017	2016	2016	2014	2016	2013	2015	2016
53.462	51.175	47.555	46.431	46.093	42.551	40.233	36.025	35.859	34.249
Open	Open	Open	Controlled	Controlled	Controlled	Open	Open	Controlled	Open
Natural	Natural	Artificial	Natural	Natural	Natural	Natural	Natural	Natural	Natural
Partitioned	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned	Duplicated	Partitioned
Europe	Europe	Europe	Europe	Europe	Europe	Europe	Europe	Europe	Europe
TYPE 1	TYPE 1	TYPE 4	TYPE 7	TYPE 7	TYPE 7	TYPE 1	TYPE 1	TYPE 8	TYPE 1

94	93	92	91	90	89	88	87	86	85	84
Flensburg	Görlitz	Slavonski Brod	Frankfurt/Oder	Calafat	Narva	Cieszyn	Grenzach-Wyhlen	Lindau	Großschönau /	Halluin
Padborg	Zgorzelec	Brod	Slubice	Vidin	Ivangorod	Cesky Tesin	Birsfelden / Muttenz /	Bregenz	Varnsdorf / Rumburk /	Menen
Germany	Germany	Croatia	Germany	Romania	Estonia	Poland	Germany	Germany	Germany	France
Denmark	Poland	Bosnia Herzegoniva	Poland	Bulgaria	Russia	Czech Republic	Switzerland	Austria	Czech Republic	Belgium
87.432	55.904	60.742	58.193	18.643	57.130	35.102	14.171	25.249	23.358	20.662
2016	2016	2015	2016	2012	2017	2016	2015	2016	2016	2015
4.335	31.280	17.943	16.800	50.977	10.539	25.750	44.583	29.139	30.865	33.112
2018	2016	2013	2016	2015	2017	2018	2017	2016	2016	2017
91.767	87.184	78.685	74.993	69.620	67.669	60.852	58.754	54.388	54.223	53.774
Open	Open	Controlled	Open	Controlled	Controlled	Open	Controlled	Open	Open	Open
Artificial	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural
Duplicated	Partitioned	Partitioned	Partitioned	Duplicated	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned
Europe	Europe	Europe	Europe	Europe	Europe	Europe	Europe	Europe	Europe	Europe
TYPE 5	TYPE 1	TYPE 7	TYPE 1	TYPE 8	TYPE 7	TYPE 1	TYPE 7	TYPE 1	TYPE 1	TYPE 1

105	104	103	102	101	100	99	98	97	96	95
Weil am Rhein	Helsingör	Freilassing	Tourcoing	Kladovo	Konstanz	Bregenz	Gibraltar	Como	Hendaye	Herzogenrath
Basel	Helsingborg	Salzburg	Mouscron	Drobeta Turnu	Kreuzlingen	Rheintel	La Línea de la Concepción	Chiasso / Vacallo	Irun / Hondarribia	Kerkrade
Germany	Denmark	Germany	France	Serbia	Germany	Austria	UK	Italy	France	Germany
Switzerland	Sweden	Austria	Belgium	Romania	Switzerland	Switzerland	Spain	Switzerland	Spain	The Netherlands
30.030	47.364	16.648	96.809	19.222	82.859	29.139	34.408	84.394	16.328	46.612
2015	2018	2016	2015	2016	2015	2016	2016	2015	2015	2016
175.940	143.304	150.887	57.773	102.347	21.560	72.000	63.146	11.738	78.904	45.817
2017	2016	2016	2017	2015	2016	2016	2017	2016	2017	2017
205.970	190.668	167.535	154.582	121.569	104.419	101.139	97.554	96.132	95.232	92.429
Open	Open	Open	Open	Controlled	Open	Open	Controlled	Open	Open	Open
Natural	Natural	Natural	Artificial	Natural	Artificial	Natural	Artificial	Natural	Natural	Artificial
Duplicated	Duplicated	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned
Europe	Europe	Europe	Europe	Europe	Europe	Europe	Europe	Europe	Europe	Europe
TYPE 2	TYPE 2	TYPE 1	TYPE 4	TYPE 7	TYPE 4	TYPE 1	TYPE 10	TYPE 1	TYPE 1	TYPE 4

115	114	113	112	111	110	109	108	107	106
Presidio/Texas	Roma/Texas	Melchor de Mencos	Ciudad Hidalgo	Copenhagen	Terespol	Strasbourg	Aachen	Annemasse	Giurgiu
Ojinaga/Chihuahua	Ciudad Miguel	Benque Viejo Del Carmen	Ciudad Tecun Uman	Malmö	Brest	Kehl	Vaals	Geneva	Ruse
U.S.A	U.S.A	Guatemala	Mexico	Denmark	Poland	France	Germany	France	Romania
Mexico	Mexico	Belize	Guatemala	Sweden	Belarus	Germany	The Netherlands	Switzerland	Bulgaria
6.958	10.265	6.780	14.606	613.288	5.794	35.032	244.951	35.234	61.353
2016	2016	2017	2010	2018	2014	2015	2016	2015	2011
26.100	22.600	21.865	11.532	333.633	340.141	277.270	9.817	198.979	159.798
2014	2014	2017	2018	2016	2016	2015	2017	2016	2015
33.058	32.865	28.645	26.138	946.921	345.935	312.302	254.768	234.213	221.151
Controlled	Controlled	Controlled	Controlled	Open	Controlled	Open	Open	Controlled	Controlled
Natural	Natural	Artificial	Natural	Natural	Natural	Natural	Artificial	Natural	Natural
Partitioned	Duplicated	Cross-Border Activity Dependent	Cross-Border Activity Dependent	Duplicated	Partitioned	Partitioned	Partitioned	Partitioned	Partitioned
North America	North America	North America	North America	Europe	Europe	Europe	Europe	Europe	Europe
TYPE 7	TYPE 8	TYPE 12	TYPE 9	TYPE 2	TYPE 7	TYPE 1	TYPE 4	TYPE 7	TYPE 7

123	122	121	120	119	118	117	116
San Luis/Arizona	Eagle Pass/Texas	Del Rio/Texas	Port Huron/Michigan	Sumas/Washington	Blaine/Washington	Douglas/Arizona	Sault Ste. Marie/Michigan
San Luis /Rio Colorado-Sonora	Piedras Negras/Coahuila	Ciudad Acuna/Coahuil	Sarnia/Ontario	Abbotsford	White Rock/South Surrey	Agua Prieta/Sonora	Sault Ste. Marie/Ontario
U.S.A	U.S.A	U.S.A	U.S.A	U.S.A	U.S.A	U.S.A	U.S.A
Mexico	Mexico	Mexico	Canada	Canada	Canada	Mexico	Canada
32.148	28.834	35.998	29.231	1.409	5.164	16.604	13.704
2016	2016	2016	2016	2016	2016	2016	2016
172.400	156.500	141.300	96.151	121.279	104.051	84.500	66.313
2014	2014	2014	2016	2016	2016	2014	2016
204.548	185.334	177.298	125.382	122.688	109.215	101.104	80.017
Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Artificial	Natural	Natural	Natural	Artificial	Artificial	Artificial	Natural
Duplicated	Cross-Border Activity Dependent	Duplicated	Partitioned	Partitioned	Cross-Border Activity Dependent	Duplicated	Partitioned
North America	North America	North America	North America	North America	North America	North America	North America
TYPE 11	TYPE 9	TYPE 8	TYPE 7	TYPE 10	TYPE 12	TYPE 11	TYPE 7

131	130	129	128	127	126	125	124
Hidalgo/Texas	Detroit/Michigan	Calexico/California	Brownsville/Texas	Laredo/Texas	Niagara Fall/New York	Buffalo/New York	Nogales/Arizona
Reynosa/Tamaulipas	Windsor/Ontario	Mexicali/Baja-California	Matamoros/ Tamaulipas	Nuevo Laredo/Tamaulip	Niagara Fall/Ontario	Fort Erie/Ontario	Nogales/Sonora
U.S.A	U.S.A	U.S.A	U.S.A	U.S.A	U.S.A	U.S.A	U.S.A
Mexico	Canada	Mexico	Mexico	Mexico	Canada	Canada	Mexico
849.843	672.795	40.232	183.823	257.156	211.758	256.902	20.008
2016	2016	2016	2016	2016	2016	2016	2016
649.800	287.069	730.800	479.900	397.100	88.071	30.710	232.100
2014	2016	2014	2014	2014	2016	2016	2014
1.499.643	959.864	771.032	663.723	654.256	299.829	287.612	252.108
Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Natural	Natural	Artificial	Natural	Natural	Natural	Natural	Artificial
Partitioned	Partitioned	Duplicated	Partitioned	Partitioned	Cross-Border Activity Dependent	Duplicated	Partitioned
North America	North America	North America	North America	North America	North America	North America	North America
TYPE 7	TYPE 7	TYPE 11	TYPE 7	TYPE 7	TYPE 9	TYPE 8	TYPE 10

142	141	140	139	138	137	136	135	134	133	132
Corumba	Tabatinga	Guajara-Mirim	Aguas Verdes	Quarai	Brasileia	Jaguarao	Monte Caseros	Coronel Sapucaia	San Diego/California	El Paso/Texas
Puerto Quijarro	Leticia	Guayaramirin	Huaquillas	Artigas	Cabija	Rio Branco	Bella Union	Capitan Bado	Tijuana/Baja-California	Ciudad Juarez/Chihuah
Brazil	Brazil	Brazil	Peru	Brazil	Brazil	Brazil	Argentina	Brazil	U.S.A	U.S.A
Bolivia	Colombia	Bolivia	Ecuador	Uruguay	Bolivia	Uruguay	Uruguay	Paraguay	Mexico	Mexico
97.480	63.635	46.632	23.480	23.555	24.765	28.230	25.600	15.016	1.406.630	837.918
2017	2017	2015	2015	2016	2017	2016	2015	2017	2016	2016
19.243	41.326	44.000	57.370	41.900	26.585	13.567	13.751	18.864	1.386.100	1.398.400
2017	2015	2016	2017	2018	2018	2018	2018	2017	2014	2014
116.723	104.961	90.632	80.850	65.455	51.350	41.797	39.351	33.880	2.792.730	2.236.318
Controlled	Open	Controlled	Open	Controlled	Controlled	Open	Controlled	Open	Controlled	Controlled
Natural	Artificial	Natural	Natural	Natural	Natural	Natural	Natural	Artificial	Artificial	Natural
Duplicated	Partitioned	Cross-Border Activity Dependent	Cross-Border Activity Dependent	Cross-Border Activity Dependent	Cross-Border Activity Dependent	Duplicated	Cross-Border Activity Dependent	Partitioned	Partitioned	Partitioned
South America	South America	South America	South America	South America	South America	South America	South America	South America	North America	North America
TYPE 8	TYPE 4	TYPE 9	TYPE 3	TYPE 9	TYPE 9	TYPE 2	TYPE 9	TYPE 4	TYPE 10	TYPE 7

152	151	150	149	148	147	146	145	144	143
Cucuta	Clorinda	Foz do Iguaçu	Posadas	Foz do Iguaçu	Concordia	Ponta Pora	Uruguaiana	Santana do Livramento	Salvador Mazza
Urena	Asuncion	Ciudad del Este	Encarnacion	Puerto Iguazu	Salto	Pedro Juan Caballero	Paso de los Libres	Rivera	Yacuiba
Colombia	Argentina	Brazil	Argentina	Brazil	Argentina	Brazil	Brazil	Brazil	Argentina
Venezuela	Paraguay	Paraguay	Paraguay	Argentina	Uruguay	Paraguay	Argentina	Uruguay	Bolivia
662.765	57.700	264.044	344.700	264.044	159.800	69.100	129.784	83.324	20.800
2017	2015	2017	2015	2017	2015	2015	2017	2014	2015
55.400	525.294	299.255	127.527	45.800	99.823	115.583	46.200	64.631	101.278
2017	2016	2017	2016	2015	2018	2016	2015	2018	2017
718.165	582.994	563.299	472.227	309.844	259.623	184.683	175.984	147.955	122.078
Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Open	Controlled	Open	Open
Natural	Natural	Natural	Natural	Natural	Natural	Artificial	Natural	Artificial	Natural
Duplicated	Cross-Border Activity Dependent	Duplicated	Partitioned	Partitioned	Cross-Border Activity Dependent	Partitioned	Partitioned	Duplicated	Partitioned
South America	South America	South America	South America	South America	South America	South America	South America	South America	South America
TYPE 8	TYPE 9	TYPE 8	TYPE 7	TYPE 7	TYPE 9	TYPE 4	TYPE 7	TYPE 5	TYPE 1

APPENDIX B

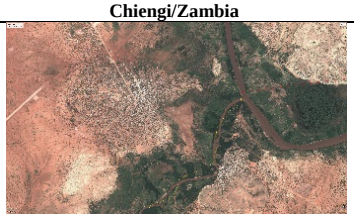
Satellite Images of Paired Border Cities

1- Malaba/Kenya
Malaba/Uganda

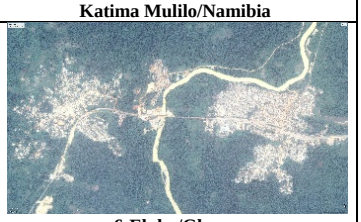
2- Pweto/DRC
Chiengi/Zambia

3- Sesheke/Zambia
Katima Mulilo/Namibia

4- Kye Ossi/Cameroon
Ebebiyin/Equatorial Guinea

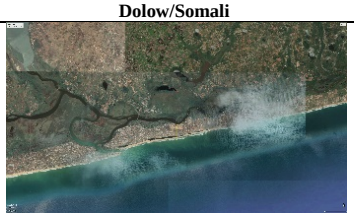


5-Dolo/Ethiopia
Dolow/Somali

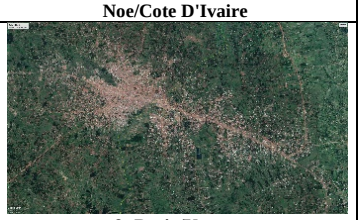


6-Elubo/Ghana
Noe/Cote D'Ivaire

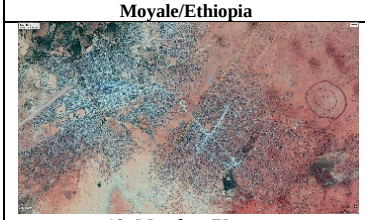
7-Moyale/Kenya
Moyale/Ethiopia



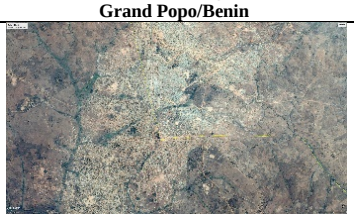
8- Aneho/Togo
Grand Popo/Benin



9- Busia/Kenya
Busia/Uganda



10- Mandera/Kenya
Beled Hawo /Somali

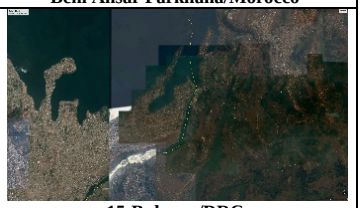


11- Tunduma/Tanzania
Nakonde/Zambia

12- Melilla/Spaim
Beni Ansar Farkhana/Morocco

13-Ceuta/Spain
Finideq/Morocco

14-Goma/DRC
Gsenyi/Rwanda

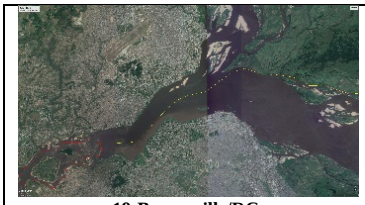


15-Bukawu/DRC
Cyangugu/Rwanda

16-N'Djanema/Chad
Kousseri/Cameroon

17-Bangui/ Central African Repuplic
Zongo/DRC

18-Lomoe/Togo
Afloa/Ghana



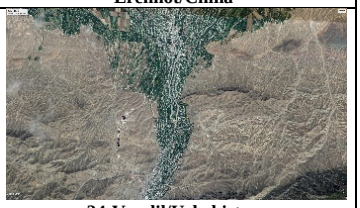
19-Brazzaville/RC
Kinshasa/DRC

20-Padang Besar/Thailand
Padang Besar/Malaysia

21-Zamyn Üüd/Mongolia
Erenhot/China

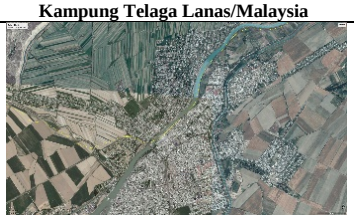
22-Wandingsen/China
Pang Hseng/Myanmar (Burma)

23-Tak Bai/Thailand
Kampung Telaga Lanas/Malaysia



24-Vuodil/Uzbekistan
Kadamjay Pulgon/Kyrgyzstan

25-Akçakale/Turkey
Tell Abyad/Syria



26-Uchkurgan/Uzbekıstan
Narny/Kyrgyzstan

27-Wiang Chiang Khang/Thailand
Huoi Xai/Laos

28-Bahrani/India
Krishnanagar/Nepal

29-Zabaykalsk/Russia
Manzhouli/China

30-Daluo Zhen/China
Mong La/Myanmar (Burma)

31-Sarakhs/Iran
Serakhs/Turkmenistan

32-Qorasuv/Uzbekistan
Kara Suu/Kyrgyzstan

33-Sungai Kolok/Thailand
Rantau Ponjang/Malaysia

34-Moreh/India
Tamu/Myanmar (Burma)

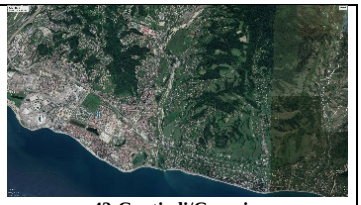
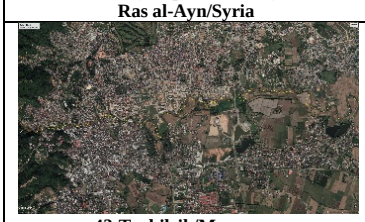
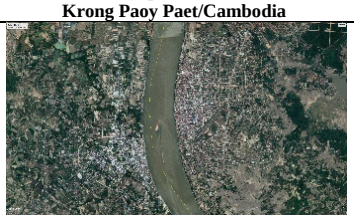
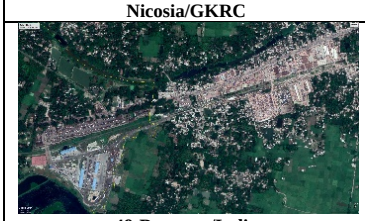
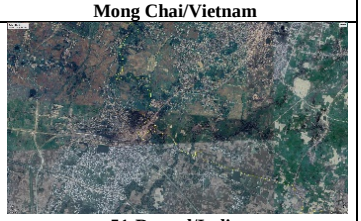
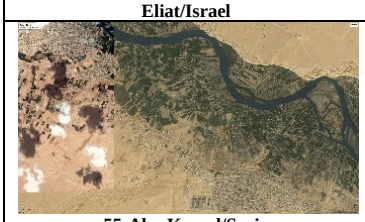
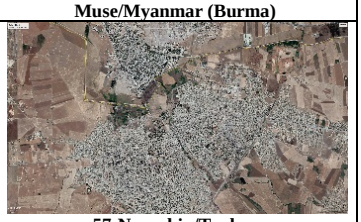
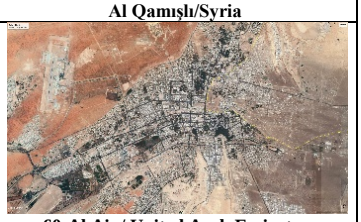
35- Dibba Al Hiyn/ United Arab Emirates
- Dibba Al Baya/Omman

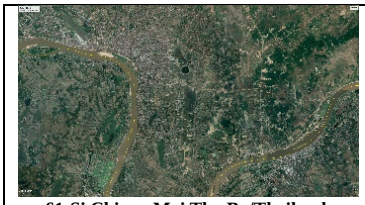
36-Jaigaon/India
Phuntsholing/Bhutan

37-Nakhon Phanom/Thailand
Thakhek/Laos

38-Keles (Taşkent)/Uzbekistan
Saryagash/Kazakhstan

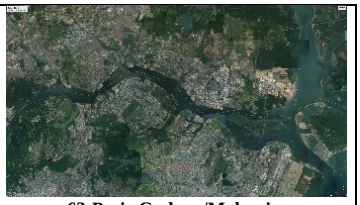
39-Astara/Azerbaijan
Astara/Iran

 **40-Ceylanpınar/Turkey** **Ras al-Ayn/Syria**	 **41-Tokmok/Kyrgyzstan** **Sortobe/Kazakhstan**	 **42-Gantiadi/Georgia** **Adler/Russia**
 **43-Tachileik/Myanmar** **Wiang Phang Kham Mae /Thailand**	 **44-Aranyaprathet/Thailand** **Krong Paoy Paet/Cambodia**	 **45-Hekou Zhen/China** **Lao Cai/Vietnam**
 **46-Lefkoşa/KKTC** **Nicosia/GKRC**	 **47-Mukdahan/Thailand** **Savannokhet/Laos**	 **48-Dongxing/China** **Mong Chai/Vietnam**
 **49-Bangaon/India** **Benapole/Bangladesh**	 **50-Myawaddy/Myanmar(Burma)** **Mae Sot/Thailand**	 **51-Raxaul/India** **Birgunj/Nepal**
 **52-Al Aqabah/Jordan** **Eliat/Israel**	 **53-Changbai Zhen/China** **Hyesan/North Korea**	 **54-Ruili/China** **Muse/Myanmar (Burma)**
 **55-Abu Kamal/Syria** **Al Qa'im/Iraq**	 **56-Jogbani/India** **Bratnagar/Nepal**	 **57-Nusaybin/Turkey** **Al Qamışlı/Syria**
 **58-Xo'jaobad/Uzbekistan** **Oš [Osh]/Kyrgyzstan**	 **59-Blagoveshchensk/Russia** **Heihe/China**	 **60-Al Ain/ United Arab Emirates** **Al Buraimi/Omman**



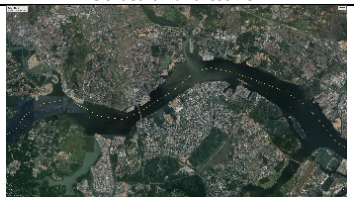
61-Si Chiang Mai Tha Bo/Thailand
Vientiare/Laos

62-Jerusalam/Israel
Jerusalam/Palestine



63-Pasir Gudang/Malaysia
North East Region/Singapore

64-Yuanbao/China
Sinuiju/North Korea

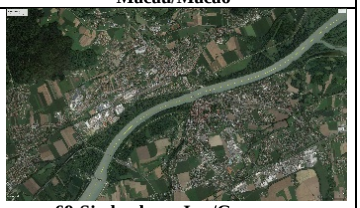


65-Jaohor Bahru/Malaysia
North Region/Singapore

66-Xiangzhou/China
Macau/Macao

67-Shenzhen/China
Shueng Shui/Hong Kong

68-Kiefersfeiden/Germany
Kufstein/Austria



69-Simbach am Inn/Germany
Braunau am Inn/Austria

70-Zittau/Germany
Porajow Sieniawka/Poland

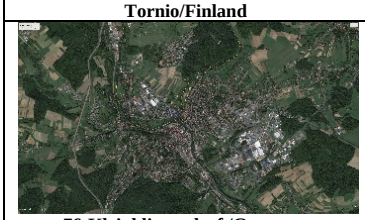
71-Tui/Spain
Valença/Portugal

72-Comines/France
Comines/Belgium

73-Haparanda/Sweden
Tornio/Finland

74-Guben/Germany
Gubin/Poland

75-Oltenita/Romania
Tutrakan/Bulgaria



76-Kleinblittersdorf /Germany
Sarreguemines/France

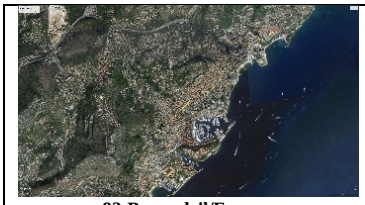
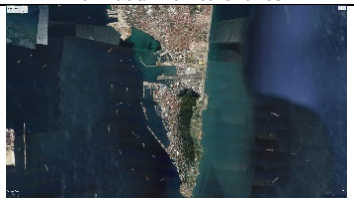
77-Esztergom/Hungary
Sturovo/Slovakia

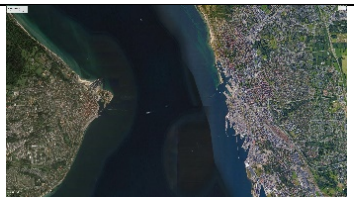
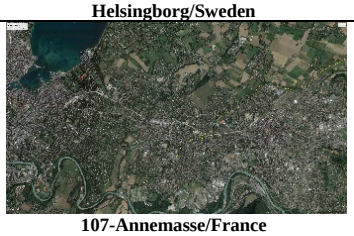
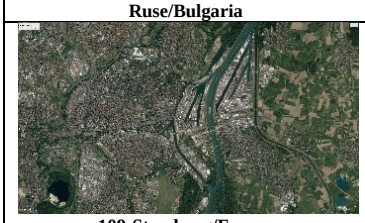
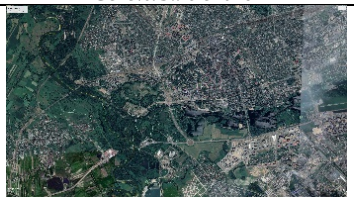
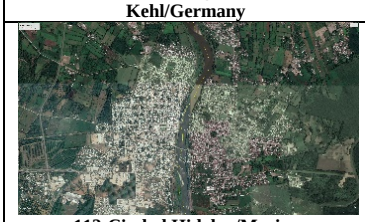
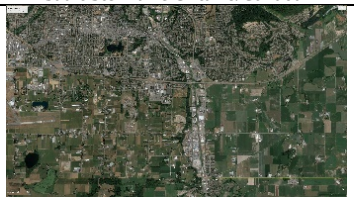
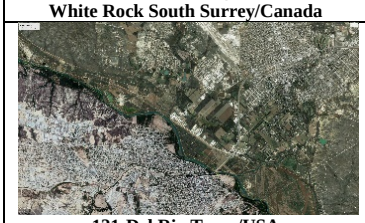
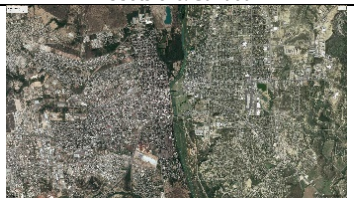
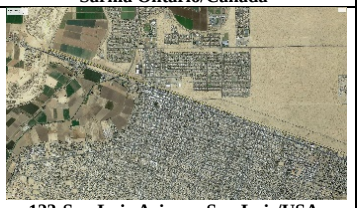
78-Mohyliv-Podilskyi/Ukraine
Otaci Calaraseuca Valcinet/Moldova

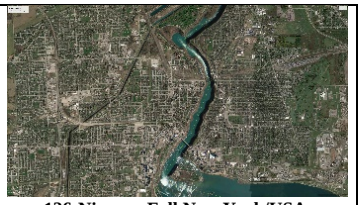
79-Rheinfelden/Germany
Rheinfelden/Switzerland

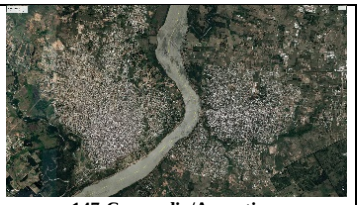
80-Sighetu Marmatiei/Romania
Solotvyno/Ukraine

81-Gorizia/Italy
Nova Gorica/Slovenia

 **82-Beausoleil/France** **Monaco/Monaco**	 **83-Komarom/Hungary** **Komarno/Slovakia**	 **84-Halluin/France** **Menen/Belgium**
 **85-Großschönau-Seifhennersdorf-Neugersdorf-Ebersbach/Germany** **Varnsdorf-Rumburk-Jirikov/Czech Republic**	 **86-Lindau/Germany** **Bregenz/Austria**	 **87Grenzach Wyhlen/Germany** **Birsfelden Muttenz Pratteln/Switzerland**
 **88-Cieszyn/Poland** **Cesky Tesin/Czech Republic**	 **89-Narva/Estonia** **Ivangorod/Russia**	 **90-Calafat/Romania** **Vidin/Bulgaria**
 **91-Frankfurt am Oder/Germany** **Slubice/Poland**	 **92-Slavonski Brod/Croatia** **Brod/Bosnia Herzegoniva**	 **93-Görlitz/Germany** **Zgorzelec/Poland**
 **94-Flensburg/Germany** **Padborg/Denmark**	 **95-Herzogenrath/Germany** **Kerkrade/The Netherlands**	 **96-Hendaye/France** **Irun Hondarribia/Spain**
 **97-Como/Italy** **Chiasso Vacallo/Switzerland**	 **98-Gibraltar/UK** **La Línea de la Concepción/Spain**	 **99-Bregenz/Austria** **Rheintel/Switzerland**
 **100-Konstanz/Germany** **Kreuzlingen/Switzerland**	 **101-Kladovo/Serbia** **Drobeta Turnu Severin/Romania**	 **102-Tourcoing/France** **Mouscron/Belgium**

 **103-Freilassing/Germany** **Salzburg/Austria**	 **104-Helsingör/Denmark** **Helsingborg/Sweden**	 **105-Weil am Rhein/Germany** **Basel/Switzerland** **Saint Louis/France**
 **106-Giurgiu/Romaina** **Ruse/Bulgaria**	 **107-Annemasse/France** **Geneva/Switzerland**	 **108-Aachen/Germany** **Vaals/The Netherlands**
 **109-Strasburg/France** **Kehl/Germany**	 **110-Terespol/Poland** **Brest/Belarus**	 **111-Copenhagen/Denmark** **Malmö/Sweden**
 **112-Ciudad Hidalgo/Mexico** **Ciudad Tecun Uman/Guatemala**	 **113-Melchor de Mencos/Guatemala** **Benque Viejo Del Carmen/Belize**	 **114-Roma Texas/USA** **Ciudad Miguel Aleman /Mexico**
 **115-Presidio Texas/USA** **Ojinaga Chihuahua/Mexico**	 **116-Sault Ste. Marie Michigan/USA** **Sault Ste Marie Ontario/Canada**	 **117-Douglas Arizona/USA** **Agua Prieta Sonora/Mexico**
 **118-Blaine Washington/USA** **White Rock South Surrey/Canada**	 **119-Sumas Washington/USA** **Abbotsford/Canada**	 **120-Port Huron Michigan/USA** **Sarnia Ontario/Canada**
 **121-Del Rio Texas/USA** **Ciudad Acuna Coahuila/Mexico**	 **122-Eagle Pass Texas/USA** **Piedras Negras Coahuila/Mexico**	 **123-San Luis Arizona San Luis/USA** **Rio Colorado Sonora/Mexico**

		
124-Nogales Arizona/USA **Nogales Sonora/Mexico**	**125-Buffalo New York/USA** **Fort Erie Ontario/Canada**	**126-Niagara Fall New York/USA** **Niagara Fall Ontario/Canada**
		
127-Laredo Texas/USA **Nuevo Laredo Tamaulipas/Mexico**	**128-Brownsville Texas/USA** **Matamoros Tamaulipas/Mexico**	**129-Calexico California/USA** **Mexicali Baja-California/Mexico**
		
130-Detroit Michigan/USA **Windsor Ontario/Canada**	**131-Hidalgo Texas/USA** **Reynosa Tamaulipas/Mexico**	**132-El Paso Texas/USA** **Ciudad Juarez Chihuahua/Mexico**
		
133-San Diego California/USA **Tijuana Baja-California/Mexico**	**134-Coronel Sapucaia/Brazil** **Capitan Bado/Paraguay**	**135-Monte Caseros/Argentina** **Bella Union/Uruguay**
		
136-Jaguarao/Brazil **Rio Branco/Uruguay**	**137-Brasileia/Brazil** **Cabija/Bolivia**	**138-Quarai/Brazil** **Artigas/Uruguay**
		
139-Aguas Verdes/Peru **Huaquillas/Ecuador**	**140-Guajara Mirim/Brazil** **Guayaramirin/Bolivia**	**141-Tabatinga/Brazil** **Leticia/Colombia**
		
142-Corumba/Brazil **Puerto Quijarro/Bolivia**	**143-Salvador Mazza/Argentina** **Yacuiba/Bolivia**	**144-Santana do Livramento/Brazil** **Rivera/Uruguay**

 **145-Uruguaiana/Brazil** **Paso de los Libres/Argentina**	 **146-Ponta Pora/Brazil** **Pedro Juan Caballero/Paraguay**	 **147-Concordia/Argentina** **Salto/Uruguay**
 **148-Foz do Iguaçu/Brazil** **Puerto Iguazu/Argentina**	 **149-Posadas/Argentina** **Encarnacion/Paraguay**	 **150-Foz do Iguaçu/Brazil** **Ciudad del Este/Paraguay**
 **151-Clorinda/Argentina** **Asuncion/Paraguay**	 **152-Ceuta/Colombia** **Urena/Venezuela**	