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# Rise and Fall of Tios-Tieion

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**Abstract.** The existence or endurance of the city is determined by social, economic, cultural, and technological factors. Therefore, transportation connections become physical signifiers of the relation between two spaces. Nevertheless, the potential for change in transportation is more dynamic when compared to other factors. Change in the infrastructure and systems of transportation become evident at the urban scale more rapidly. In addition to leading to the formation of new cities or to socio-cultural and economic development in the already-existent cities, this dynamic structure may also cause the decrease in economic power, and even the desertion of settlements. Furthermore, it functions as a leading, even determining, parameter in the formation of space, thereby in economic and social development. The fact that, throughout history, centres of communication and commerce were established at intersection, stopping and lodging points of transportation links and/or their development into residential areas attests to this interaction. In the commercial centres and life of the city, the effects of regional transportation networks and technologies surface relatively. By means of the analytical method, this study focuses on how, within the history of settlements, population increases due to the choice of location based on transportation and strategic significance, and how urban functions vary accordingly. As such, the interaction between urban development and transportation links for the Ancient City of Tios will be analysed, and the signifiers for urban development will be designated.

## 1. Introduction

On the intersection points of transportation networks, new settlements have been founded through activities such as security, accommodation, and commodity exchange, and existing ones have been developed. With transportation connection losing its economic significance, the economies of settlements have gone backward, and settlements have even been abandoned. The mobility brought about by urban dynamics in this process moved to the foreground as a tool in meeting vital needs by means of diversifying social life and having people acquire experience. At the present, however, the mobility of people and commodities between countries and cities is increasing. As per capita income increases, so does the covered distance, and the desire to travel in different forms, such as going to commercial centres at further distances for shopping or going on vacation to exotic destinations, intensifies. At the urban scale, it is a necessity to get to areas of different urban functions for various needs, such as for work, shopping, entertainment, rest, and visit. For this reason, urbanites are in constant motion, day and night. This movement of varying distances within and outside the city, along with technological advance shortening the work and transportation hours, causes a significant portion of the income to be spent on social life. It is evident that these developments are based on the mutual interaction between the city's other internal and external dynamics or the social, economic, cultural, and technological factors providing the permanence of the city and transportation, and that they shape the infrastructure and the superstructure of transportation.



In the complicated interaction between the city and transportation that involves too many variables, especially three variables that are in a functional relation appear to be the determining factors in urban development.

- Change in the location and function of city's regional planning;
- Change in commerce due to the changing road system;
- Hegemony of the political structure over settlements [1].

The impact of these variables, defined at the theoretical level, on the city can be determined by:

- socio-economic structure,
- socio-cultural structure,
- and physical-spatial structure characteristics.

These are at the same time signifiers of urban development. At times when these characteristics change, the interaction between transportation and urban development can be determined through an analysis of the change in the transportation system and a query of the reasons. In this presentation, the impact of regional- and urban-level transportation connections on urban development will be analysed, in its historical context and through its theoretical extensions, for the ancient city of Tios, and inferences will be made based on references to archaeological findings.

## **2. The Impact of Transportation on Urban Settlement**

Between transportation and urban development, there exist physical relations, significant economic factors, social factors, and environmental effects. In the interaction between transportation and urban development that evolves with these factors, the interaction forms defined below are observed.

- More transportation infrastructure investments at the regional-level constitute the basis for regional development benefits.
- The settlement potential of intersecting points at which two or more transportation modes come together is high.
- Primary transportation networks have significant impacts on locations that have potential for local economy and development. Locations with potential for development acquire a new advantage through the increase in access when compared to other locations.
- Transportation costs constitute a small proportion of general productions costs in industry. As such, transportation costs are not of primary importance in the selection of location by a capital or settlement. However, they are the secondary factor in economic development.
- For utmost benefit in a transportation system, different transportation modes of different scales should be operated in harmony. For reasons of monetary value and saving time, urban centres or urban paraphernalia are located at main transportation arteries or at their intersection points.
- Theories that analyse the relations between transportation and urban development aim at the optimal and equal use of land economy in allocating land for urban function areas [2].

In this interaction, the power to yield urban development of regional and inner-city transportation connections which are transformed by transportation technologies and types with high potential for change is higher at city centres.

### **3. The Ancient City of Tios**

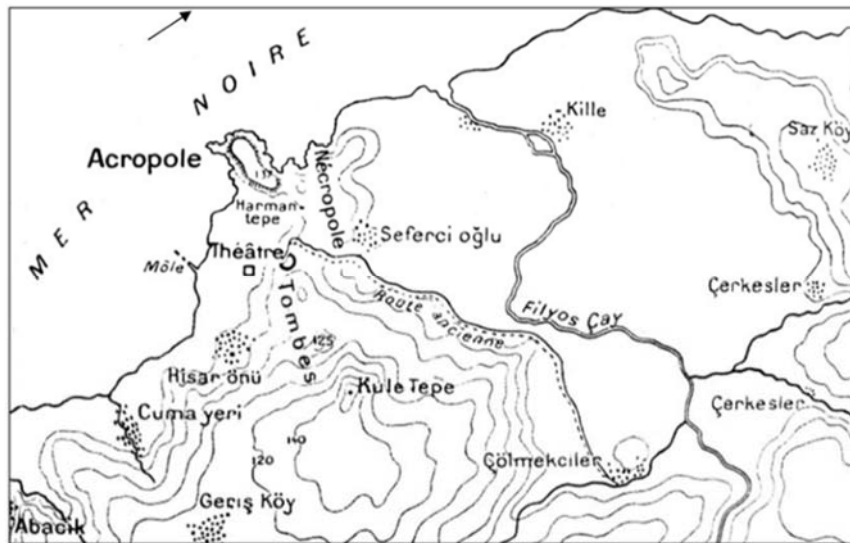
Due to the various cultures that lived for thousands of years, Anatolia has undertaken crucial roles in the formation of world civilizations, and it has always been talked about in relation to science, art, and culture. Contemplating and narrating the history of world civilizations without referring to Anatolia is impossible.

Archaeological excavations carried out since 2006 by the Filyos Municipality, affiliated with the Zonguldak Çaycuma District, have enabled the unearthing of results that are crucial for the region's history. Located on the Turkish coast of the Black Sea yet being the only single ancient city on which there is no modern settlement, Tios hosts data that would deeply impact the history of the region. The excavations carried out have brought to light the remains of many buildings, such as baths, temples, and basilicas, which date back to the Roman period. Furthermore, the only amphitheatre on the Black Sea coasts is here, in the ancient city of Tios and so is one of the most well-preserved ancient harbours not only in the Black Sea but also in Anatolia.

Although the founding of the city is not known for certain, information passed on by ancient writers suggests that the city was founded in 7<sup>th</sup> century B.C. at a hilltop 70-100 meters above sea level by a migrant group from Miletos under the leadership of a priest named Tios [3]. The characteristics of Tios are that it has a natural harbour, it is located right to the west of the delta where the Filyos meets the sea, and that it has fertile lands, pastures, and ecological wealth. The importance of Tios begins in the Hellenistic period before which the city was in the form of a small castle-city. In the 4<sup>th</sup> century B.C., Tios was under the rule of Herakleia Pontike (Karadeniz Ereğlisi), and it was in this period that coins began to be made [3, 4, 5]. The Tios settlement, which was neither politically nor martially very powerful, remained in Heracleia's shadow throughout this century, and politically relied on this city [6]. In the 4<sup>th</sup> century B.C., it gained significance, unified with the other three cities in its close proximity, made coins, and, in the Roman period, expanded down from the hilltop to the sea coast. Although Tios became reputed as a religious centre in the 5<sup>th</sup> century A.D., it gradually lost its importance in the Middle Ages during Seljuk and Ottoman periods (13<sup>th</sup> - 15<sup>th</sup> centuries A.D.) and it continued to exist as a small fishermen's village.

Castle-City (acropolis) was located on three terraces on a cape that was 70 meters at its western tip and 100 meters at its eastern tip above sea level. The north side was a steep cliff coming down to the sea. The walls surrounding the acropolis must have last been made in the period of Genova rule (13<sup>th</sup> - 14<sup>th</sup> centuries) (Map 1).

In the status of an important harbour city in the Black Sea throughout ancient ages, Tios transformed into a centre where commodities such as fish, wine, and grain were traded by means of river and sea transportation [7, 8].



**Figure 1.** Map of Ancient City of Tios Bellow map.

### 3.1. Spatial Dispersion of the City of Tios

**East Hill:** In the excavations held in the east of the castle-city (acropolis), small findings such as perfume bottles and gas lamps were discovered in tombs dating back to the Roman period. That the number of tombs was very high suggests that the hillsides were used as a cemetery (necropolis). The part called Downtown lies from the ancient harbour all the way along the coast to today's Filyos district. The remains of the city are (Map 2):

**Ancient Harbour:** In the times of city's earliest settlement there was a natural harbour. However, in the 4<sup>th</sup> century B.C., due to the increase in economic and political power, a harbour must have been created by the erection of a breakwater. In time as the city prospered, storing, loading and small-scale manufacturing workshops were built in close proximity to the harbour. In Tios's small harbour today, it is possible to observe, under the water, the two breakwaters structured in the shape of a quarter bend against the winds and waves from the north. On the coast is the stone-paved dock and building ruins. In the years 2012 and 2013, within the ancient harbour and at open sea, fishermen discovered three shipwrecks, numerous amphora pieces, pieces of five iron anchors and chains, lead Roman weights, and a bronze scale weight in the form of a male statue.

**Tunnel:** To the north of the harbour, right by the hill and at the seaside is the entrance to a tunnel. As the tunnel, which we think lied uphill into the castle, collapsed, it cannot be entered. It might be believed that this tunnel was used to carry water to the castle and to run away in a case of danger.

**Coastal Wall:** Only a 50-meter segment of the existing wall, which starts at the old harbour and extends towards the city, is visible. Repaired at different periods, the wall is of 1 meter thick, and, at present, 5 meters high. During drillings by the wall, a portion of the dock composed of giant stone blocks was unearthed.

**Inner-City Roads:** In the archaeo-geophysics research carried out at downtown area, the city's roads and structures were designated. In the drilled research pits, a 10-meter portion of

Roman period roads, lying in the east-west and north-south direction, of 3.40 metres width, lined at the base with sandstone plates, was discovered. On the threshold stone of one building, phallus – the symbol of abundance and plenty – in the form of a relief was discovered.



**Figure 2.** Map 2 - Tios City Map

**Baths:** Remains from two baths dating back to the Roman period were unearthed. It is highly likely that these are the harbour bath and empire or gymnasium bath.

**Aqueduct:** Its function has not been fully determined. The structure with four ducts made of brick may possibly have been the entrance to the gymnasium. To the north of the aqueduct was discovered the remains of a brick building.

**Theatre:** Located to the south of the city, leaning on the cliff, and utilized between 2<sup>nd</sup> and 4<sup>th</sup> centuries B.C., the theatre was among the most well-preserved theatres in Anatolia by the end of the 19<sup>th</sup> century. The audience capacity is determined to have been five thousand.

**Defence Tower:** On the city's southern cliffs, upon the terraces are houses, defence walls and roads, all under the ground.

**Necropolis (Ancient Cemetery):** The city's cemeteries are located on the cliffs of the East Hill and to the south of the theatre. Depicting highly rich architectural diversity, these tombs were raided and ruined by treasure hunters.

**Church:** The so-called church is at present under the rubble dumped by the factory. It is known that the building with a rectangular plan had two windows on each of its side walls and an abscissa towards the east [9].

Furthermore, in the light of the mosaic-paved structure found at Çaycuma's Kadioğlu village, the commercial storage-dock by the river at Gökçebey Üçburgu location, the many Tios findings dispersed today around many museums, and the geographical location, it could as well be argued that Tios has been used, throughout history, as a significant commercial and military base.

As the research and excavations we carried out indicate, Tios was engaged in fishing and vine cultivation, and exporting to other cities of the region throughout Hellenistic, Roman and Byzantine periods. Decrees by the Tios city council honouring Roman statesmen and emperors, discovered through studies of epigraphs, attest to the city's significance and political relations. Roman emperors and state governors who deemed the city crucial renewed the roads enabling transportation to other cities. Through epigraphs, again, we find out that gods such as Zeus, Dionysus and Esculope were worshipped in the city.

### *3.2. Tios City Findings: Socio-Economic Structure*

In order to gather information on the socio-economic life in the city of Tios archaeological findings should primarily be investigated. To the west of the acropolis, inside the city are the remains of the breakwater pertaining to the ancient harbour. Moreover, by the seaside and close to the starting point of the harbour wall are stones of the dock remains. The remains of the breakwater made of large stone blocks, readily visible under the water, signify the city's both commercial and military importance [10]. Tombstones of sailors from Tios involved in sea trade, found in the coastal cities of the Black Sea, indicate that sea trade had expanded to the whole of the Black Sea region. Marble and bronze statue pieces found during the cleaning of the theatre emphasize that the city was an important settlement centre [10]. Findings of Byzantine-style pottery indicate the population density of the people of Tios-Filyos between 6<sup>th</sup> and 15<sup>th</sup> centuries [10]. Through the samples of medieval pottery from Tios-Filyos, it is possible to observe how effective and powerful intercultural communication was. Dating back to the 13<sup>th</sup> century, another Tios finding of a well-rounded crescent ornament may be regarded as a commercial example influenced by Anatolian Seljuk art [10]. All these data indicate that Tios was economically a significant stopping point and strategically crucial in the sea trade of the region.

On the cliffs of the acropolis of the ancient city of Tios and to the west of the city are remains of the harbour. Frequently referred to in ancient sources especially by Pseudo-Sylax, this harbour is of vital importance for Tios. The ancient harbour is composed of three breakwaters, one in the northwest and two lying towards the southwest. The basic structure of the harbour has an elliptical form. Remains of a huge stone dock by which ships anchored in the ancient periods were found as a result of excavations carried out at this site.

The existence of fertile agricultural lands in the delta formed where the Billaios River meets the sea and along the river valley added to the city of Tios important prosperity. Additionally, it is for certain that the Billaios River was a commercial waterway. Commercial products with high added value from the inner regions were brought to Tios through the river. They were spread to the world of the Black Sea and the Mediterranean from here by means of the ancient harbour. Through ancient sources, we understand that, in the Roman period, the people of Tios were occupied by sea-river trade, agriculture, fishing and wine production [11].

That the soil in the villages and rural areas close to the city centre or within its territory was adequately irrigated by means of the Billaios River and of natural water resources rendered the agricultural fields tended by the public fertile. As such, products of high quality and top-level quantity could be cultivated in this area. That the trade network established by the Billaios River and the city harbour of Tios was based on an orderly system paved the way for the transportation and sale of these products to other regions, thereby making agriculture the most significant occupation of the public and the means of living with the highest earnings [12, 13]. Believed to be commercially an important centre, the dock experienced floods, fires and ravages in the Roman and Byzantine periods. Observed through stratigraphical analyses, ash layers, roofing tile layers, and dense pebble piles enable the acquisition of information on stages. Aside from the finding of numerous coins, the rapid money circulation brought about has moved this area to another plane. Considered to be the emporium, the dock is a three-staged harbour where small ships sought refuge and stored their loads for the purpose of providing the connection with spaces in the interior and of transporting their loads to the heartland. Numerous wooden dock stands were discovered where the unloading was carried out. Lying in a specific order on the east-west direction, the wooden stands are under great risk at present. 26 dock stands were discovered. They were located with 0.65-1.30 meter gaps in between. The 10.46 metre-long dock has been significantly distorted.

Tios is the single example of ancient settlement excavations on Turkey's Black Sea coasts. Gökçebey, on the other hand, is only this city's unique dock. Moreover, Roman and Byzantine period findings discovered in the 2012 - 2013 excavations are the first data verifying the history of the region. Most of the coins found in the excavations at the borders of dock structures date back mostly to the 1<sup>st</sup> century B.C. to the 4<sup>th</sup> century A.D. That the large-sized amphoras and pithos found during the excavations also date back to the 1<sup>st</sup> century B.C. to the 5<sup>th</sup> century A.D. proves that, during this period, the region had a sizeable area and that, in the period of six centuries, the region was at a significant status commercially and economically. The existence of such a developed commercial network at the centre leads to the idea that products from the heartland were checked here and transported to the major harbour (the Tios Harbour).

Another signifier of the socio-economic structure is the life quality of the city's residents. The production, consumption and economics of food has been one of the basic dynamics of life at Tios within an approximately two thousand year-process. In the Middle Ages when meat products were more prestigious, the low-calorie grain and vegetable based diet of Anatolian societies due to poverty constitutes one of the most important reasons for tooth decay rates. Yet the nutritional habits of the people of Tios-Filyos possibly rich in animal products and high in calorie are revealed through their tooth decay rates.



Like people, teeth, too, start to actively lose their functions towards the end of their life span. In ancient societies, the life span of teeth did not increase in direct proportion with the increase in human life span. This cannot have been different in Tios. Decayed teeth and poor oral health constitute a significant factor that directly affects the individual's life quality and comfort. It was a widespread disease among Anatolian societies in the past, like it was for world's societies. It has been observed that a tight relation existed between decay and age in ancient societies. The 3.86 % decay rate observed in the Tios population indicates how effective the consumption of sea or animal products was in the diet of the people of Filyos. Nevertheless, this idea has to be supported through archaeological findings. Among the people of the ancient city of Filyos tooth erosion was significantly lower than among other Anatolian societies. It is a fact that nutrition based on animal products or agricultural products is closely related with the socio-economic structure of a society. The rates indicate that the socio-economic structure of the Filyos society under analysis was strong. The 1.63 % rate of absida is a sign of healthy living. The rates of hypoplasia and dental plaque also support this inference. That life lasted long in Filyos led to an increase in the rate of losing teeth before death, and this remains paleo-pathologically distinctive in comparison with ancient Anatolian societies.

### *3.3. Tios City Findings: Physical-Spatial Structure*

Located within the borders of the ancient city of Tios, Filyos is an important settlement established in the 7<sup>th</sup> century B.C. to the west of the Naillaios River (today's Filyos River) [14, 15], as Miletos Colony City by Priest Tios [14]. The city referred to in many sources through names such as Tieion, Teios, Tion, Tios [14], Teion, Tieium [16] and Tianos [17], was named as Kille by Von Diest, Falios by Bore, Hell by Hommaire, and Filios by Kalinka [14]. Bilge Umar notes that the city's name transformed to Vileos in Greek [18]. Addressed through many names until the Ottoman period, the city was referred to as Hisarönü in the Ottoman period until 1944. This name was later changed into Filyos [19].

Claimed by ancient writers to have been established in the second half of the 7<sup>th</sup> century B.C. by a priest named Tios as a colony of Miletos, the city served various regional kingdoms throughout the Hellenistic period. In the year 70 B.C., it went under Roman rule, and in the Byzantine period, it served as a crucial religious centre [20]. Remaining under Byzantine rule for long years, the city weakened in commerce and military with the strengthening of the Genoese. Gaining distinctive privileges through an agreement signed between the Genoese and the Byzantines in 1261, the Genoese founded a colony in the region. With the strengthening of the Genoese on the Black Sea coasts as of the 13<sup>th</sup> century, the Byzantine dominance weakened gradually [16, 21].

After Tios remained for a long period under Byzantine dominance, the inner regions of Paphlagonia went under Turkish rule. Cities in the coastal regions, such as Heracleia (Karadeniz Ereğlisi), Tios (Filyos), Amastris (Amasra) and Kytoros to the further east, remained under Byzantine rule until the end of the 13<sup>th</sup> century. According to the narration of George Pachymeres, the connection between Paphlagonia's coastal cities and inner regions was cut off at the beginning of the 14<sup>th</sup> century. As of this date, access to coastal regions such as Tios was possible only through sea ways [22].

The Spanish Ambassador Glavijo who anchored near Filyos on March 25, 1404 during a sea voyage indicates that there were Turks on the Filyos coast at this date. Glavijo's statement from March 25, 1404 could be taken as an early record to prove the end of Byzantine dominance [23]. Having remained under Ottoman rule from the 15<sup>th</sup> century until the end of the 19<sup>th</sup>, the city largely lost its significance of the Hellenistic, Roman and Byzantine periods, and transformed into a small coastal town.

An administrative district affiliated with the Bolu-Kastamonu State in the year 1530, Hisarönü (Filyos) soon after changed into a village affiliated with the Zonguldak centre [19]. In the Ottoman archival documents from 1840, it is indicated that the city known as the Hisarönü district had many villages under its jurisdiction [24]. The area named Hisarönü in 1841 was a district within the Bolu-Kastamonu city [19]. In 1944, Filyos was made a subdistrict of Zonguldak's Çaycuma district [19]. Referred to by two names, as Filyos and Hisarönü, in the maps of 20<sup>th</sup> century travelers [14], the city is today called Filyos and a small town under Zonguldak's Çaycuma district. It is believed that, stripped off of the glory it had in the Ottoman period and afterwards and continuing its existence in the form of an insignificant settlement, Filyos relied on its rich forests, through which its people served the Ottoman fleet by forestry, agriculture, animal husbandry and shipbuilding [12].

#### 4. Conclusion

Transportation networks have gained significance in the globalizing world order as signifiers of relations between spaces. This system of relations is of a nature that changes according to the place that serves the space by providing the best infrastructure and substructure. In other words, settlements on transportation networks are shaped according to the capital's choice of location. The variables effective in this formation are defined as policies that determine the direction of organic relations among settlements and transportation technologies connected to commodity flow that influence the spatial choice of location by transportation technologies and capital. The above-discussed concept of transportation made dynamic through variables impacts urban development positively or negatively.

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