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TOPKAPI PALACE:

Reflections on Social and Spatial Order

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ABSTRACT

Anatolia has witnessed many Ottoman structures, yet, Topkapı Palace may be the most significant one that has influenced the distribution and control of power. The Palace was built in the longest-term capital of the Empire, Istanbul, and reflected architectural and environmental features that were developing and expanding at the site for about half of the 600 years of reign of the Ottoman Empire. The palace is the symbol of interaction, social and spatial order, privacy and the territoriality affecting the overall administrational and social structure. The three-fold interaction between the Sultan, various chambers of administrational levels and the public is the key concept that the research is based on.

Although construction of The Topkapı Palace first started in 1459 after Istanbul became the capital of Ottoman Empire, its significant role on reflecting Ottoman ruling is undeniable. The transformation and expansion character of the Palace give clues for understanding how the order is facilitated through the governing and social issues. Therefore, in this research the concept of state that lie behind the tradition of ruling, its reflection to architectural space and the latent aspects of public-and private relations embedded in a deep hierarchy are examined and compared within the context of Mehmet II (Fatih) and Süleyman I (Kanuni) eras of the Topkapı Palace.

The palace as the royal residence of the sultan and the centre of social issues as well as the centre for government, is a complex structure, settled on a large area, configured through the spatial hierarchy on the interfaces of four main courtyards and the relationship between the administrative, residential and auxiliary spaces. At its peak complexity, Topkapı Palace was

home to as many as 4,000 people, while containing many public and private facilities such as mosques, hospitals, bakeries, as well as a mint in its territory.

As the courtyards are the interface between the public and the private, through ceremonies and rituals, integration of indoor and outdoor spaces, the level of visibility through the palace complex and its effects on the spatial meaning are explored. Therefore, depending on the complex and developing physical structure of the palace a two-fold syntactic comparison is executed in this research; in order to define spatial hierarchy of spaces, public-private interfaces and the overall rationale behind the power concept. At the first stage, the configuration of the courtyards and thresholds of both periods are examined through defined reference nodes; whereas at the second stage Süleyman I era is scrutinized. The first stage gives an overall panorama on the motion flow, while the second stage focuses on the building scale.

Syntactic findings show that the effects of transformation through administrational and institutional structure from 15th century to 16th century in Ottoman Empire have affected the spatial order and meaning in Topkapı Palace, in terms of deeper hierarchy, centralization of power, and introversion. On the other hand, while the state based on traditions keep their significance within the spatial configuration, and the existence of power remains solid.

KEYWORDS

Social order, configuration, interaction, Topkapı Palace, spatial differentiation, power, spatial hierarchy

1. INTRODUCTION

In Plato's ideal world, which was depicted in The Republic, the tripartite analogy between the soul and state is denoted as logical, spirited and appetitive classes of the society, briefly representing rulers, soldiers and workers. In this harmonious yet deeply hierarchical system where members are ranked according to their virtues and aptitudes, justice is the main key component that holds everything in divine order. Especially in ancient communities, envision of cosmos is formed within the framework of fundamentals such as human, God, and order. Values, which are innate both in institutions and traditions, are the basis of justification for societies' thoughts and actions (Bıçak, 2004). In Turkish cosmology continuity of the state has emerged as one of the most important values since it means existence (Bıçak, 2009). In Turkish culture, state is an essential value, which also contains the concepts of justice and centralization.

In the mentioned cosmos, Tengri depicted as an eternal, powerful God, maintained its presence in all of the dialects and accepted religions of the Turkic people. Particularly, the rulers who are believed that they were given the blessing (kut), have to be in harmony with Tengri (Roux, 1994). In the determination of the duties of the state and the ruler, God's will and the order of the universe have been used as a model. On the other hand, Kutadgu Bilig, written by Yusuf Has Hacip in 1069, as the "bible" of statecraft theoretically analyses the relationship of ruling Sultan and vizier based on the myths of Orkhon inscriptions. The book discusses the administrative problems such as protection of rulers, conditions of dominance, circumstances that will cause collapse, methods of ruling for people's loyalty and means of keeping treasure full. When traditional understanding of the state is analyzed, power emerges as the most important concept. There are two main foundations of power; one is the blessing of God (kut of Tengri), while second one is to be skilled enough to meet the needs of the society by acting in accordance with the blessing. Justice is an important decisive factor considering the relations of the state and ruler with the people. The goodness of the laws also indicates the wisdom of the ruler. Therefore, similar to Plato's just state, traditional Turkish thinking is established on the continuity of state and justice based duties assigned either from the kut of Tengri or the ruler himself.

Palaces as the signifiers of the central authority give us extensive information on the society, political systems, socio-cultural implications purely within the context of architecture and

spatial configuration. The collection of this information is easier if we can actually observe the daily royal life behind walls. However, when the means of power has gone through a severe transformation, architecture also loses its functional and semantic basis. As the layout of spatial configuration turns into a puzzle that needs to be solved and interpreted, we reach for the history and try to recapture the hidden rationale. Therefore, in this research the concept of state that lie behind the tradition of ruling, its reflection to architectural space and the latent aspects of public-and private relations embedded in a deep hierarchy are examined and compared within the context of Mehmet II (Fatih) and Süleyman I (Kanuni) eras of the Topkapı Palace of the Ottoman Empire.

2. REFLECTIONS OF POWER AND RITUAL ON STATE AND SPACE

Especially when analysing administrative buildings, the factor of political power as the determinant of configuration and its usage, are needed to be understood. As Šuvakovic (2014) mentioned, although sometimes its intentions are hidden, architecture is essentially a political and ideological practice; so when analysing the executive and representative effects in architecture we cannot be restricted to questions about architecture's pragmatic functions. Therefore, the practice of architecture is in its character a signifier practice and that means a material practice, in which the social and the human are produced in the struggle to structure the visible, i.e. presentable order of power, rule, governance, and existence.

The Ottoman ruling tradition goes back to initial Turkic societies. The world state realized by Oghuz Khan Legend has emerged as an archetype for the following states, even after the adaptation of Islam during the 10th century. As the legend was also used to explain the origins, it had been very influential on determining the ruler's right to govern and the character of the state (Roux, 1994). Therefore through Oghuz Khan as the first ancestor of Turks, the descendants and generations who were connected to him could explain their origins to fulfil the requirements of claiming legitimate right on the throne. The Seljuks have acquired the right to govern the Turkish state by linking themselves to the legend, whereas Ottomans linked themselves to Seljuks. Thus, this explanation helped both the legitimacy of the state and the origin the society needed. As a result of mentioned continuity in state traditions, the relationship that Seljuks had established with Islam determined the relationship of Ottomans as well. In Ottoman state, there were two separate notions; while Oghuz Khan Legend constitutes the foundations of the state understanding, faith is formed in the framework of Islamic belief and finds expression in the person of the Prophet. This dual evolution is evident especially comparing the initial years of the empire with later stages.

Ottoman Empire had been the longest-lasting Turkish state, which had dominated a wide geography until the 18th century by maintaining its existence through balancing economic structure and transformation of social structure (Bıçak, 2009). The quality of the army, which was greatly supported by the society as required by the holy war belief, was an essential factor in state organization. Thus army was considered as the assurance of economic growth in addition to a large number of officers and professional experts. Moreover, since the Seljuk period the madrasahs have become the main institutions of education for state officers specialized especially on religious law (Bıçak, 2009). However, in Ottoman era, madrasah, has been enriched in content and developed a certain hierarchy that can also be seen in the formation of palace school, Enderun. Therefore, the state was regarded as a structure rising on the foundations of law and army, based on the values of order, justice and security, where madrasahs and bureaucracy played major parts on the principles and robustness.

Additionally, the adoption of localism and self-sufficiency as a principle of central state administration has enabled the prevention of richness through capital accumulation. This economic tradition has put the emphasis on social order by secure compensation of needs and also a strong submission to state and ruler. Since society does not have a property-based class structure, equality between individuals is among the fundamental values of the social structure and superiority could only be achieved through assigned duties (Roux, 1994; Bıçak, 2009). This mindset also helped the acceptance of competences among various ethnic and religious groups

that work in state bureaucracy. However, this bureaucracy has led a deep hierarchy reflected in spatial configuration, actually which is still present in Turkish state formation.

As for the architecture, social and spatial hierarchy forming Topkapı Palace, starting from Chinese palace tradition, to rural palaces of early Islamic rulers, to Seljuk Era, to early Ottoman palaces were all intertwined with the understanding of the state. Commercial relations with China and Byzantium inspired the pavilions and the geometric configuration with its landscape elements that reflect the Chinese architectural tradition in the east and the feudal chateaus emerged during the 6th and 7th centuries in the west. Seçkin (1990) states that early Islamic palaces of the 8th century which had fortified appearances, were composed of mosques, simple living units, baths and formal functions. 12th century Ghaznavid examples had four Iywan courtyards where the northern one is reserved for reception hall, while the spaces for the official functions of the palace were arranged around small courtyards. In Anatolian Seljuks, the palace is an organic collection of different sizes and constructions of various functions within the castle, described as a "palace city", reflecting the tent tradition of previous tribal states.

In ancient Turkic states, palace served both for private life of the ruler, and administrative affairs. In Ottoman palaces however, sultan's private life is located in the forbidden section, such as Ghaznavid and Chinese palaces. Edirne and Topkapı Palaces as extensive settlements in wide gardens, surrounded by city walls, similarly are formed by two sections; one houses accessible official functions, while the other one is housing Sultan's inaccessible private life. However, administrative and ceremonial functions had their own structures (Seçkin, 1990). Pavilions located in courtyards that follow each other hierarchically are also seen in these palaces as we will further discuss

3. THE DEVELOPMENT AND SOCIO-SPATIAL RELATIONS WITHIN THE TOPKAPI PALACE

Throughout the last three decades, space syntax has imposed itself as a reliable analytical technique for quantifying specific structural properties of urban spatial networks, which have been shown to be strongly associated with a wide range of urban social and functional phenomena. The findings of the space syntax research programme led to the progressive construction of a new morphological theory of the city: one that merges objective observational knowledge of urban spatial structures, with knowledge of the human sociological and behavioural phenomena occurring therein, while trying to find systematic relations between both; and so, a theory that was able to propose cogent causal explanations for the fact of cities being like they are (Hillier 1999a, Hillier 2012).

Topkapı Palace (Figure 1), which was built in the second half of the 15th century by Mehmet II, is the product of architectural traditions accumulated through Anatolian, Middle Eastern and Mediterranean civilizations of the previous centuries. Although its formation was coincided with the period when the borders of the country were expanded, and therefore transition from the city-state to central-state system was seen, in the 15th century, Topkapı Palace was an unspectacular building that very few people actually inhabited (Seçkin, 1990). Despite this appearance, it was programmed according to a state concept that is predefined in Mehmet II's code of laws and structured to operate predicting the improvements in the state organization.

Figure 1 - Location of Topkapı Palace as seen from Google Earth and its view from the Harem

In the traditional palaces where a keep surrounded by quadrangle walls, houses the ruler's mansion situated on a high set. The central position of the ruler as a product of the cosmographic plan scheme, expresses dominance in four wind directions, as in Chinese and Turkic cultures. This basic configuration remained unchanged however; the Turkish palace was developed within the local conditions, and architectural characteristics of the region as seen in Topkapı Palace.

The spatial hierarchy of Topkapı Palace rests essentially on the interfaces of courtyards and the relationship between the administrative, residential and auxiliary spaces (Figure 2). Before the imperial fortress was built to enclose the huge space, Topkapı Palace had only two courtyards and one entrance (Necipoğlu, 1991), similar to the depictions of Old Palace, which is the precedent of the Edirne and Topkapı Palaces. The relationship of the buildings was based on the traditional order of the Ottoman encampment, also seen in Seljuk tents. When the land wall of the Imperial Fortress was joined to the Byzantine city walls, a new fore courtyard appended to the palace's main core. On the wall there are several belvedere towers functioned as a link between the palace and its surroundings, signifying that the sultan was watching over the public.
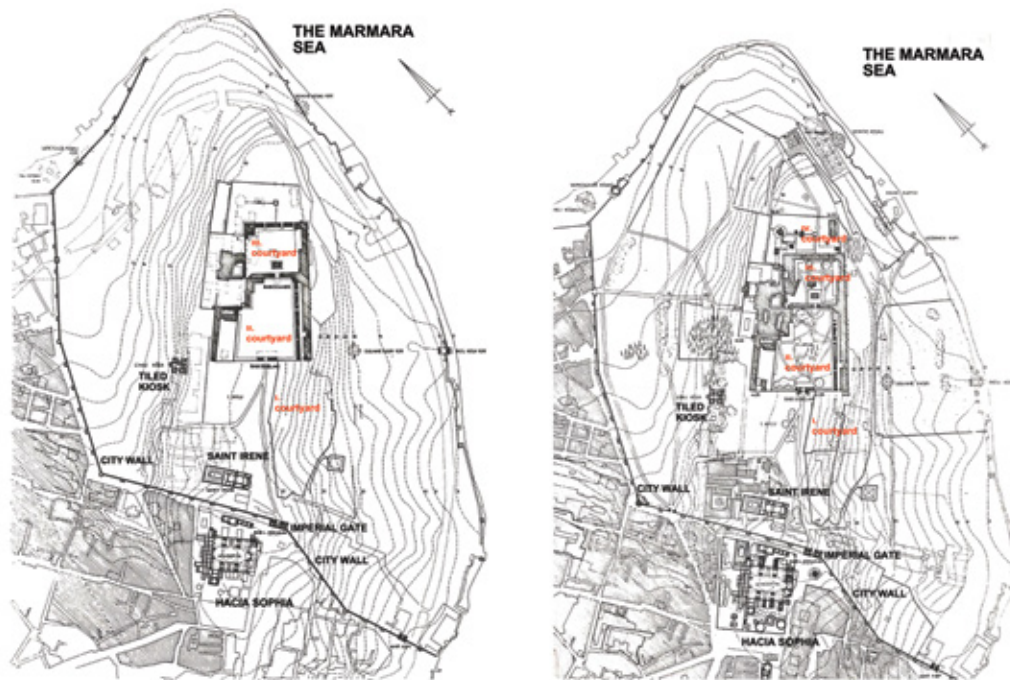
Figure 2 - Topkapı Palace during the 15th century (left) and 16th century (right)

Ceremonial movement is directly related with the imperial architectural representation of the palace and has a narrative dimension according to the hierarchy. Although the connection gates are not aligned, three courtyards settle the hierarchy (Seçkin, 1990; Necipoğlu, 1991). The first courtyard surrounded by gardens housed various public functions, and although some were pre-existed such as Basilica of Saint Irene, located on the left of the Imperial Gate (Bab-ı Hümayun), the buildings here are mostly functional structures with simple tectonics. As the natural extension of Hippodrome area several service functions like; a menagerie, a stable, a powder magazine, a bakery, a hospital, storehouses, workshop for painters, an archive, tailors, tent makers and other royal craftsmen were located in this courtyard. Beside the contrast between the military functioning of the second courtyard and paradisiacal tectonics of the third courtyard, the first courtyard is clearly a public extension of the city.

The buildings in the second and third courtyards were more prestigious. The second courtyard acted as a theatrical setting for ceremonies and housed administrative functions as the administrative centre of the empire. For example, Mehmet II himself was still appearing in the administrative courtyard of the palace for fifteen minutes to brace his soldiers and to accept ambassadors until he abolished this practice in his code of laws (kanunname) with the construction of Chamber of Petitions inside the residential third courtyard. (Necipoğlu, 1991). Justice Tower (see Figure 1), which was the landmark of the palace and Council Hall as the main administrative space, are both located in this courtyard. Vestibules, porticoes, halls and kitchens on the right are other important service structures located in second courtyard, as modelled from the traditional tent-palaces of the previous Turkish rulers, where the administrative enclosure was connected to the residential courtyard. Mehmet II translated this traditional layout into a permanent architectural configuration with the administrative buildings located on the left corner.

The third courtyard was more than a royal residence with a palace school (Enderun) inside, as a reference to continuity of state, as well as the connection of state, bureaucracy and army. The threshold between second and third courtyard that passes through a monumental gate, meets the Chamber of Petitions (Arz Odası), which cuts the visual perception through the third courtyard. As an invention of Mehmet II, this building was used for the presentations of

the leading divan members. Ambassadors or officials who had once been received publicly at the second courtyard could now be received privately in this chamber. Although the sultan is invisible, this building represents his power, whereas the hierarchical setting and functioning represent the centralized imperial government. The configuration of the royal structure begins with Chamber of Petitions also known as Throne Room in some references. Third courtyard is surrounded by buildings such as palace school, dormitories, harem connection, royal baths and kiosks along with a mosque. The inner treasury also located here, has three halls open to loggia. There are private courtyards of sultan and his family in addition to an outer portico with terraces, pool, and several pavilions in hanging garden.

In the following decades, basic principles of Mehmet II were protected but the palace structure was renovated by each sultan. The main ceremonial buildings founded by Mehmet II had been rebuilt or remodelled and the private royal domain had been extended (Necipoğlu, 1991). Especially during the reign of Süleyman I, in the 16th century, because of the extension of the borders of the empire, a new structural organization in the palace was needed. The centralization of the state had a great effect on the architectonics of the palace. For example, during Mehmet II's reign, Topkapı Palace acted as a seasonal resting stop, in between the campaigns of sultan and his courtyard. However in the 16th century, palace provided a private realm for a self-contained social organism sealed off from the world outside. The sultan withdrew into his inner household. Power of the sultan was increased and the hierarchy in the palace was deepened. The extensions built in first and third courtyard were enriched. The private third courtyard had transformed mainly with the enlargement of the harem and with addition of new pavilions to the gardens and along seashore.

These architectural transformations and the ceremonial changes are related with each other. Following earlier practice, ambassadors were admitted twice into the sultan's presence in the Chamber of Petitions, once upon arrival, after a public audience with the viziers at the second courtyard and again before the departure. Earlier sultans had risen from their seat to honour the ambassadors. However, Süleyman I and his successors remained not only seated, but immobile (Ortaylı, 2017). This strong privacy and invisibility had a strong relationship with the architectural transformations. Even in his private quarters the sultan had contacted with a very few people, such that a sign language was first seen within the palace during this period.

4. SYNTACTICS OF THE SEMANTICS

Various syntactic and semantic layers determine the patterns of built space; and through interrelated position of these layers, Topkapı Palace with having ceremonial and administrational/institutional order as well as domestic space characteristics is no exception. Peponis and Wineman (2003) suggest that built space is to be understood as a relational pattern of distinctions, separations, interfaces, and connections; a pattern that integrates, segregates, or differentiates its parts in relation to each other. However, "social logic" in Topkapı Palace should be examined considering the interwoven nature of spatial layout that hosts the activities of daily life or special occasions interrelated with public and private in the context of a power based complex structure. The issues of perception and cognition are related with the movement patterns associated with functions and permissible visual and/or physical access within the palace system. In this deeply hierarchical system, where the institutional or imperial message of the palace related to power and privacy is clearly transmitted, the choices or the spatial experiences of the users are strictly related to the specific functions, thresholds, and interfacing zones just like the artwork and the order of spaces in relation with the content in a museum (Wineman and Peponis, 2010).

In the physical layout examination of Topkapı Palace, visual perception, measures of accessibility and movement are considered. Therefore, isovists and convex spaces (Benedikt, 1979; Hillier and Hanson, 1984; Hillier et al., 1987) are the key notions, where an isovist is a concept of spatial recognition that defines any particular viewpoint in a space by its visibility field; the visibility field of a single viewpoint can also be called the isovist field. Figure 3 shows the asymmetrical triangular relationship between attraction, configuration and movement

(Hillier et al., 1993). This theory suggests that, depending on the morphology of convex spaces as a whole, movement as visitor frequency and the attractors may be mutually influential, while the other two relationships are asymmetrical. The configuration may influence the location of attractors, but it is not certain that the location of attractors influence configuration. Likewise, the configuration may influence movement, but movement does not necessarily influence configuration. If strong correlations are found between movement and both configuration and attractors, the only logically possible means of influence are from the configuration to both movement and attractors, with the latter two factors influencing each other.
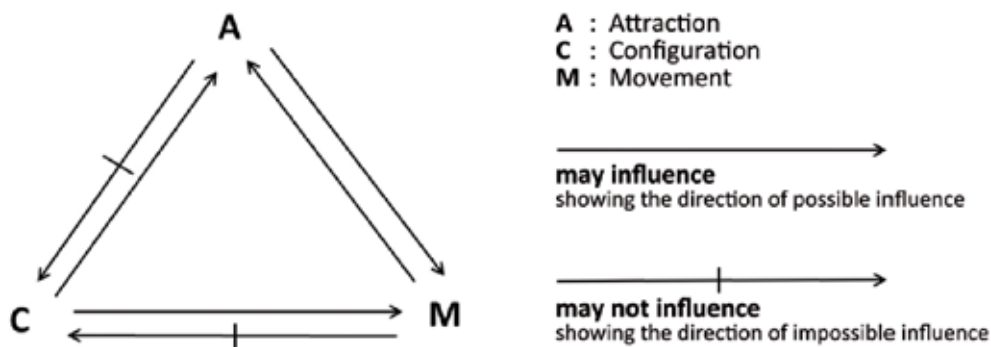

Figure 3 - Attraction, configuration and movement (Hillier, et. al., 1993)

The research explores if the integrated or segregated locations of the palace are related with the changing dynamics of physical and semantic configuration, within the hierarchy of the space. The comparative research examines and analyses the spatial layout of the Topkapı palace in relation to Mehmet II Era (1451-1481) with that of Süleyman I Era (1520-1566). As mentioned before, Mehmet II Era relates to the foundation of the palace as a synthesis of previous state traditions, while Süleyman I Era has the most significant developments and construction processes at the palace referencing and reflecting the configuration for the forthcoming centuries. Understanding the transformation of spatial order and configurative structure between the two periods is crucial in order to grasp the semantic shifts which present the significant data on the effects of changing power, public-private space relations within the palace and even on the changing positions in Ottoman Empire's institutional and organizational structure through centuries. To understand the impact of the morphology of space on the former users of the palace during the Ottoman Era, consulting to the narrations of İlber Ortaylı (2017), who is a history professor and a former chief executive officer of Topkapı Palace Museum was also necessary. Crucial morphological understanding and syntactic values depended on the connecting spaces between the courtyards, formation of the hierarchy by the order between various courtyards and reference buildings. In this research, the relationship between syntactic values of configuration and the semantics of space is studied in detail with comparative analyses of 15th and 16th century Ottoman Palace. The attractors, namely, the ceremonial power, imperial functions dealing with the encounters of palace users and official gatherings such as senior administrators of the Ottoman Empire and non-palace users such as ambassadors, foreign representatives or administrators related within the homeland of the Empire are also considered in this relationship through certain syntactic analyses within the palace. Therefore, depending on the complex and developing physical structure of the palace a two-fold syntactic comparison is executed in this research; in order to define spatial hierarchy of spaces, public-private interfaces and the overall rationale behind the power concept. At the first stage, the configuration of the courtyards and thresholds of both periods are examined through defined reference nodes (Figure 4); whereas at the second stage Süleyman I era is scrutinized (Figure 5). The first stage gives an overall panorama on the motion flow, while the second stage focuses on the building scale. A total of 9 reference nodes are selected for the analysis; however for the second stage, the entrance to the first courtyard (no: 5) was left out

in order for a detailed examination on the building scale. The selected nodes are as follows: 1st Tower of Justice – 2nd Courtyard Threshold; 2- 2nd Courtyard – 3rd Courtyard Connection Gate Threshold; 3- 3rd Courtyard - Throne Room (Chamber of Petitions) Threshold; 4- Courtyard of the Queen Mother in Harem – 3rd Courtyard Threshold; 5- 1st Courtyard Entrance Threshold (Bab-I Hümayun); 6- 4th Courtyard – East Gate Threshold; 7- 3rd Courtyard – 4th Courtyard Connection Gate (left) Threshold; 8- Enderun School East - 3rd Courtyard (Enderun Courtyard) Threshold; 9- 1st Courtyard – 2nd Courtyard Connection Gate Threshold.

1. Tower of Justice - 2.Courtyard Threshold   2. 2.Courtyard - 3.Courtyard Connection Gate Threshold   3. 3.Courtyard - Throne Room Interfacing Threshold   4. Courtyard of the Queen Mother in Harem - 3.Courtyard Interfacing Threshold   5. 1.Courtyard Entrance Threshold   6. 4.Courtyard - East Gate Interfacing Threshold   7. 3. Courtyard - 4.Courtyard Connection Gate (left) Threshold   8. Enderun School East - 3.Courtyard (Enderun Courtyard) Interfacing Threshold   9. 1.Courtyard-2.Courtyard Connection Gate Threshold

1'. Tower of Justice - 2.Courtyard Threshold   2'. 2.Courtyard - 3.Courtyard Connection Gate Threshold   3'. 3.Courtyard - Throne Room Interfacing Threshold   4'. Courtyard of the Queen Mother in Harem - 3.Courtyard Interfacing Threshold   5'. 1.Courtyard Entrance Threshold   6'. 4.Courtyard - East Gate Interfacing Threshold   7'. 3. Courtyard - 4.Courtyard Connection Gate (left) Threshold   8'. Enderun School East - 3.Courtyard (Enderun Courtyard) Interfacing Threshold   9'. 1.Courtyard-2.Courtyard Connection Gate Threshold

Figure 4 - Analysed nodes of Topkapı Palace during the 15th century (left) and 16th century (right)

1. Tower of Justice - 2.Courtyard Threshold   2. 2.Courtyard - 3.Courtyard Connection Gate Threshold   3. 3.Courtyard - Throne Room Interfacing Threshold   4. Courtyard of the Queen Mother in Harem - 3.Courtyard Interfacing Threshold   5. 1.Courtyard Entrance Threshold   6. 4.Courtyard - East Gate Interfacing Threshold   7. 3. Courtyard - 4.Courtyard Connection Gate (left) Threshold   8. Enderun School East - 3.Courtyard (Enderun Courtyard) Interfacing Threshold   9. 1.Courtyard-2.Courtyard Connection Gate Threshold
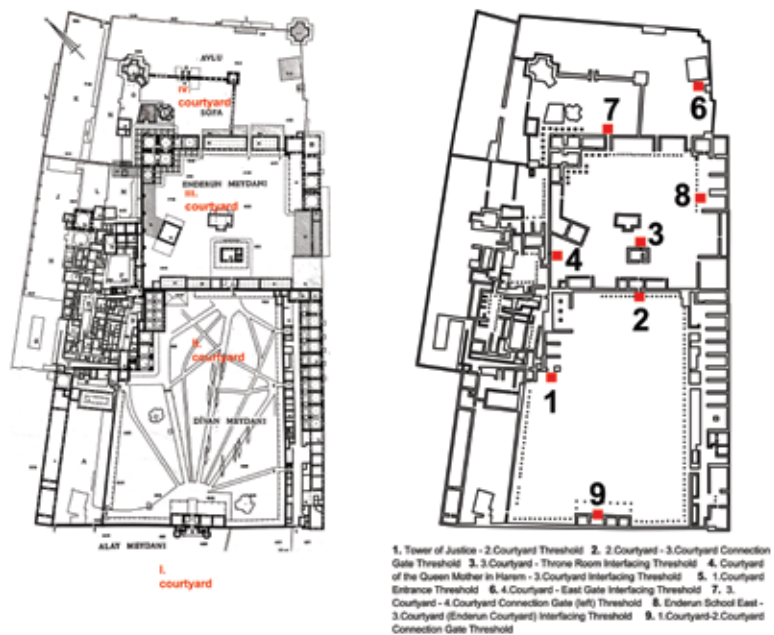
Figure 5. Analysed nodes of Topkapı Palace during the 16th century

5. ANALYSES OF THE CASE STUDY

The Syntax 2D software developed by the University of Michigan used for this research, works by creating a grid fragmentation of cellular spaces and handles the analyses starting from a logical ground built over vision fields called isovists (Benedikt, 1979; Batty, 2001; Conroy, 2001; Edgü et al., 2012, Şalgamcıoğlu et al., 2015). As a methodology, all elements that are obstructing the sight or accessibility such as construction walls of the buildings within the system, and other structures like courtyard elements, extensions of city walls or the retaining walls in the garden are all handled as walls and affect the determination of the visual field (Turner and Penn, 1999; Turner et al., 2001; Ünlü et al., 2009; Şalgamcıoğlu and Ünlü, 2013).

Comparison of integration and depth values of different nodes and areas on the plans of two periods, helps us to figure out, how spatial layout is influenced through the change in centuries and how the integration value of a space is affected by the developments within the palace. Moreover, the spaces, which are more or less integrated, or morphologically reflecting the changing character of visual fields are important investigation orientations. Therefore, the data utilized for the nodes shown in Figure 4, interfacing areas or thresholds connecting the different zones in the system reflect the syntactic values of:

- Mean Depth
- Integration
- Occlusivity
- Circularity
- Isovist Perimeter

These five data sets used for examining the syntactical transformation, are also concepts addressed in space syntax theory, and were calculated separately for every referencing node or area (Figure 4). The values at the active grids of the palace site plans (Figure 6) were separated into these data groups and added on Table 1 and Table 2. On the other hand, Statistical Package for the Social Sciences (SPSS) correlates the statistical relationships between the changing syntactic data of two periods through Pearson's Regression analyses.
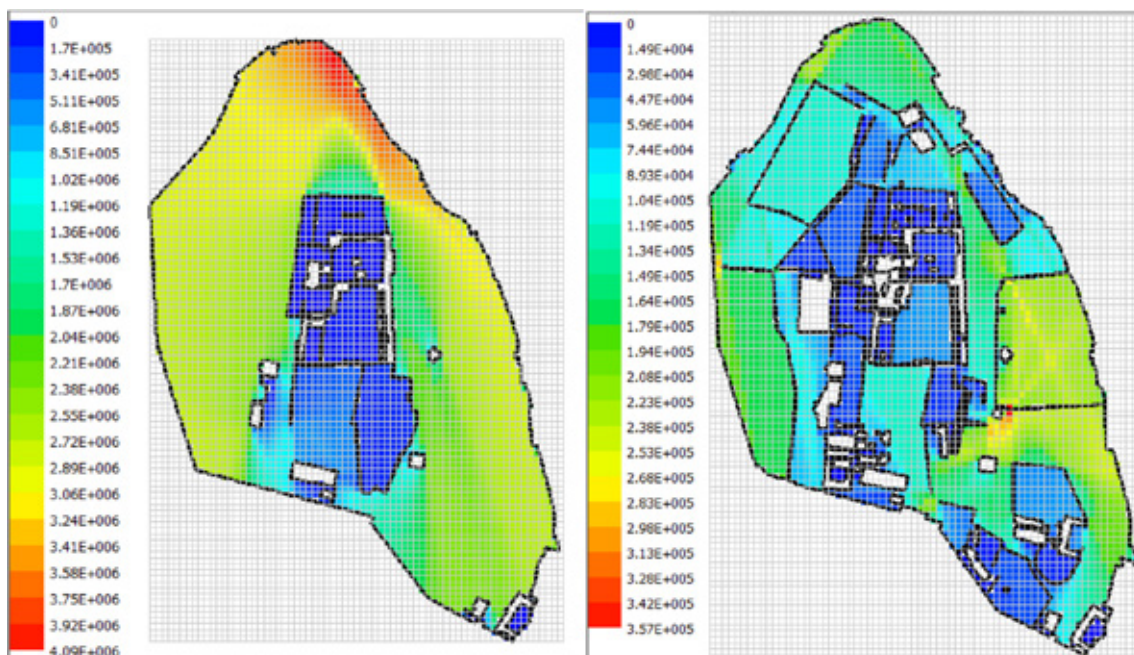

Figure 6 - Image of the Integration Analysis in 15th Century (Left) and 16th Century (Right)

The site plan analysis comparing the two periods shows the differences in the way that the palace users move within in the spatial hierarchy and the level of interaction related to spaces depending on their roles. Places that can be accessed by the public, by palace officers, by the Sultan and his family, and such are important in that sense. The level of accessibility shows the level of interaction between the "Public - Sultan", "Sultan - Ambassadors/Homeland Administrators", and "Sultan – Military" kind of relations. The information coming from the Mean Depth, Integration, Occlusivity, Circularity, and Isovist Perimeter is used to provide information about the level of interaction and movement in the palace between different users, and also the impact of administrational power on this spatial order.

Analyses depending on the points of reference and interfacing areas shown (Figure 6 and Table 1) are giving us the significant correlations about how semantic and syntactic order of space is coherent and strongly interrelated. Decreasing values of the Integration as shown in Table 1 from 15th century to 16th century significantly showing (Pearson's R=0,956 and p=0,000<0,05) that the key points of interaction referring to referencing points (shown in Figure 4) and nodes are getting more deep in terms of spatial hierarchy and configuration as the Topkapı Palace is developing and annexes are built in courtyards and in garden within the palace walls. This development is also in accordance with the institutional development of the Ottoman Empire and the Topkapı Palace. It is quiet significant that as the institutional development and the power of the Empire increases, the syntactic values of Integration in determined reference points and key interfacing nodes within the Topkapı Palace are decreasing. For example it is clearly seen that the evolution of the palace building from a simple configuration of the 15th century to a more elaborated one of the 16th century, keeps the public from easily accessing the palace grounds, while distinctly separating the courtyards for different functions. On the other hand nodes related to private life of the sultan gets shallower within a closed system of controlled accessibility.

Syntactic Values		Name of the Interfacing Threshold	15th Century (Mehmet II Era)					16th Century (Süleyman I Era)				
			Mean Depth	Integration	Occlusivity	Circularity	İsovist Perimeter	Mean Depth	Integration	Occlusivity	Circularity	İsovist Perimeter
	1	Tower of Justice - 2.Courtyard Threshold	3,74	71,31	0,6584	27,81	1555	4,76	48,09	0,5886	36,89	1781
	2	2.Courtyard - 3.Courtyard Connection Gate Threshold	3,22	82,02	0,4343	62,75	2447	4,42	55,79	0,4584	66,99	2582
	3	3.Courtyard - Throne Room Interfacing Threshold	5,49	16,81	0,3928	77,17	1596	5,23	10,72	0,5184	40,43	946
	4	Courtyard of the Queen Mother in Harem - 3.Courtyard Interfacing Threshold	4,58	17,56	0,5324	62,38	1437	5,88	2,11	0,5353	58,05	492
	5	1.Courtyard Entrance Threshold	2,47	1143,36	0,4017	46,89	5365	2,98	193,92	0,2809	233,3	7528
	6	4.Courtyard - East Gate Interfacing Threshold	6,46	19,75	0,4729	81,42	1972	4,25	16,96	0,3088	191,45	2495
	7	3.Courtyard - 4.Courtyard Connection Gate (left) Threshold	6,47	18,17	0,606	32,48	1239	5,38	6,14	0,5088	66,96	977
	8	Enderun School East - 3.Courtyard (Enderun Courtyard) Interfacing Threshold	5,52	19,59	0,4729	76,88	1736	4,99	17,19	0,4615	74,08	1648
	9	1.Courtyard - 2.Courtyard Connection Gate Threshold	2,45	374,25	0,3508	51,01	3510	3,69	111,91	0,4043	71,04	3322

Table 1 - Comparison of Syntactic Values of Topkapı Palace Site Plans of 15th and 16th Centuries

Although the circularity and the integration of the Throne Room (Chamber of Petitions), which is the meeting place of the Sultan or the senior head of state (vezir-i azam) with foreign ambassadors, other senior foreign state administrators and senior administrators from the Ottoman region, is decreasing from 77,17 to 40,43 between 15th century and 16th century, the detailed analysis of the Süleyman I Era showed that the central position and connection potential of this space is still very high between different zones and functions of the Topkapı Palace with the highest circularity value of 566,54 in Table 2. This result is significantly supporting the idea that The Throne Room is serving to the Palace as it is designed and built by being the meeting point of The Ottoman Palace with domestic and especially foreign senior visitors of the states. Semantics of the Throne room and the syntactic values overlaps and creates the harmony of the strong syntactic configuration value and the meaning.

The correlation between the changing values of Isovist Perimeter shown in Table 1 from 15th century to 16th century significantly showing (Pearson's R=0,969 and p=0,000<0,05) that the two dimensional isovist shape relating to the perimeter of the isovist area view is increasing in terms of 1st courtyard entrance threshold (point no:5 in Figure 6). The increase in this syntactic value is related with the developing construction process that is changing the geometry of the courtyard. Although the integration value is significantly decreasing, perimeter value is increasing. This increasing value shows that the number of edges creating a visual interface area between the observer and the buildings itself in the environment of the 1st courtyard in relation to the visual area is increasing. Longer dimensions in the geometry of visual field and various edges reflect this developing and more closed environment phenomenon in 1st courtyard.

For the second stage of the case study, a detailed analysis of the Topkapı Palace during the Süleyman I Era is made as shown in Figure 7. As this analysis started from the entrance of 2nd courtyard, and therefore omitted the main entrance to the 1st courtyard, and the surrounding palace gardens, we can see the evolved configuration more clearly. First of all, the 2nd courtyard maintains its semantic superiority, with Tower of Justice as the most integrated element of the system, while the 3rd courtyard, i.e. state affairs, army and privacy are mingled together as an indivisible whole. On the other hand, the expansion of harem operating almost like a connection space between the 2nd and 3rd courtyards also shows the increasing power of the royal women of the palace.
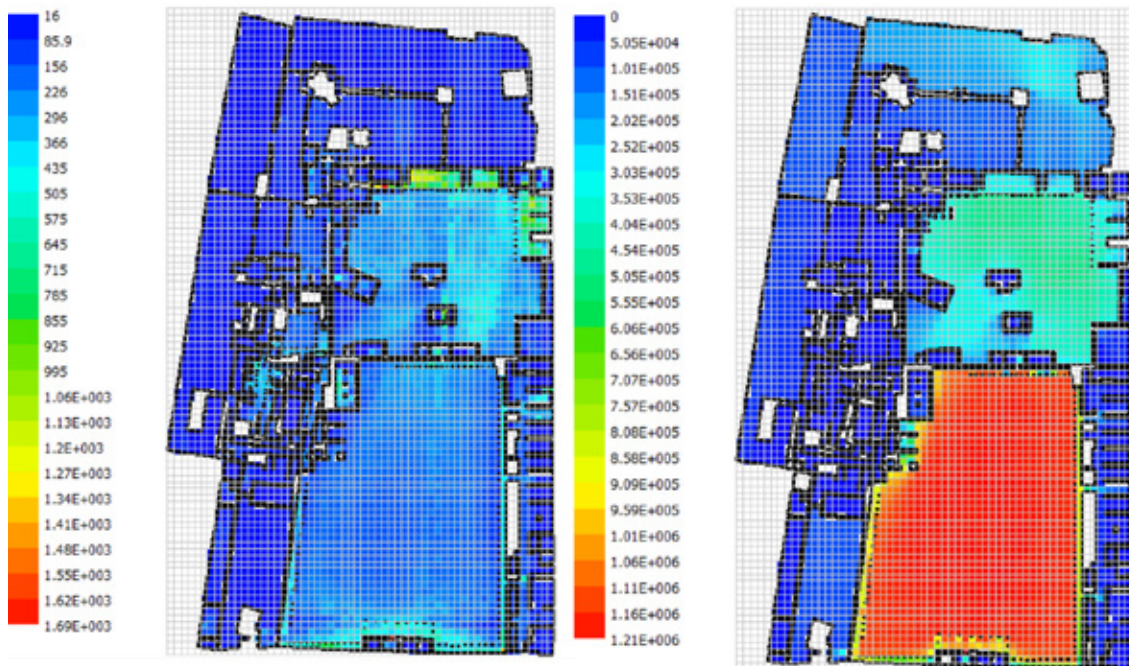

Figure 7 - Image of the Circularity Analysis of 16th Century (Left) and Integration Analysis (Right)

High circularity value of 566,54 of point no:3 in Table 2 shows that this interfacing point (Figure 5 and Figure 7) is strongly positioned at the central connection axis of the entire system in the spatial hierarchy of the palace. This area is an interface that is both connecting and distributing the movement semantically and syntactically. The morphological appearance, two dimensional shape of the isovist area perimeter, that is defined at that point is also getting transformed from a shape like square or circle to a long rectangle or a long, stretched ellipsoidal formation. This morphological change is signifying high axial connection potential of that point related with the Throne Room.

Syntactic Values		Name of the Interfacing Threshold	16th Century (Süleyman I Era)				
			Mean Depth	Integration	Occlusivity	Circularity	İsovist Perimeter
	1	Tower of Justice - 2.Courtyard Threshold	3,07	912,49	0,186	98,11	10601
	2	2.Courtyard - 3.Courtyard Connection Gate Threshold	3,02	325,81	0,0746	178,48	8544
	3	3.Courtyard - Throne Room Interfacing Threshold	2,6	322,9	0,1267	566,54	15862
	4	Courtyard of the Queen Mother in Harem - 3.Courtyard Interfacing Threshold	3,17	175,78	0,3695	76,2	4359
	5	1.Courtyard Entrance Threshold	NA	NA	NA	NA	NA
	6	4.Courtyard - East Gate Interfacing Threshold	3,57	276,43	0,4519	76,27	6129
	7	3.Courtyard - 4.Courtyard Connection Gate (left) Threshold	3,5	114,2	0,1405	222,04	6089
	8	Enderun School East - 3.Courtyard (Enderun Courtyard) Interfacing Threshold	3,04	476,58	0,1917	375,87	15768
	9	1.Courtyard - 2.Courtyard Connection Gate Threshold	3,07	903,97	0,0913	422	22014

Table 2 - Syntactic Values of Topkapı Palace Plans in the 16th Century, Süleyman I Era

Although the configuration of the palace is getting deeper from 15th to 16th centuries in terms of mean depth and integration, the geometry of space in accordance with the circularity values of configuration within the referencing points such as 3rd – 4th courtyard connection gate, Enderun School (East) in the 3rd courtyard and the most significantly Chamber of Petitions (Arz Odası) in the 3rd courtyard are all strengthening their central position in the overall setting of the Palace syntactically and also semantically (see Table 2). This process develops as the institutional power of the Empire increases. In terms of the syntactic connectivity potential and again in the context of geometry that we see from circularity values, the central position of reference points such as 1st courtyard – 2nd courtyard connection gate, 3rd courtyard – 4th courtyard connection gate and interfacing thresholds, 1st courtyard entrance, Tower of Justice – 2nd courtyard threshold (see Table 1) in the spatial order of the palace, are all strengthening their positions from 15th to 16th century.

6. CONCLUSION

In this study, the most significant relations between the syntactic and semantic transformations related to the development of Topkapı Palace are examined. The effects of transformation through administrational and institutional structure from 15th century to 16th century in Ottoman Empire have also affected the spatial order and meaning in terms of deeper hierarchy, centralization of power, and introversion. As the linear configuration with clear hierarchy enables relatively easier access for both public and official users, the organic central configuration, creates barricades around the ruling power. This articulated system obstructs the access for both public and some level of official users, while creating an intricate inner circle of trusted members. However these newly formed circles, such as the deepening of structure, construction of additional walls or the expansion of harem, remains secondary to the initial code of laws. Therefore, it is seen that the foundations of state, based on traditions keep their significance within the spatial configuration, and the existence of power remains solid.

The main elements of the palace configuration such as courtyards or a strong reference point like Chamber of Petitions all have increasing syntactic values strengthening the meaning of space as well. However as the institutional configuration develops, it gets deeper, coherently. In other words, while the institutional structure of the empire advances and the palace expanses, the spatial order gets deeper. In this context, accessibility of public and some minor administrators

to the spaces like access to 1st courtyard, but mostly 2nd courtyard is decreasing significantly, in coherence with the decreasing number of ceremonial events.

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