

COMPARATIVE ANALYSIS OF OTTOMAN PALACES IN PALESTINE AND
TURKEY WITH EMPHASIS ON ORNAMENTATION

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FOR
THE DEGREE OF MASTER OF SCIENCE
IN
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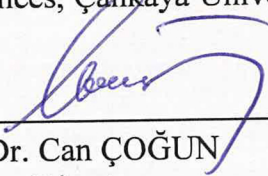
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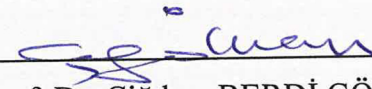
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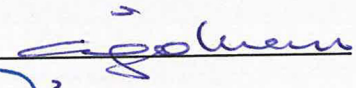
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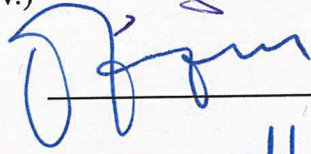
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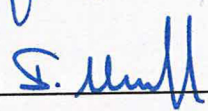
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ABSTRACT

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Ornamentations are a significant part of architecture as it provides information about the structure, its builders and its users. In this research, a review of the ornamentation development in the Eastern Mediterranean region from the Egyptian, Greek, Roman, and Islamic periods is performed, in addition to the specific types of ornamentations in Palestine and Turkey are researched in detail. In order to perform the analysis, a review of symbolism and ornament classification concepts is carried out. Moreover, ornamentations in the Eastern Mediterranean region are rich with affiliations from different civilizations, cultures and communities. Therefore, it is evident from the study that the ornamentations in Palestine and Turkey have been mainly influenced by similar cultural backgrounds, while preserving each country's nature and community. Cases are selected from Turkey and Palestine in which ornamentations are used in four palaces; Topkapi Palace (Istanbul, Turkey), Nemr Palace, Albdulhadi Palace and Toukan Palace (Nablus, Palestine). The results of the analysis show that the styles, classes, types, geometry, and affiliations of ornamentations in both countries have several similarities, while the main differences are found in color, complexity and the impact of the social status.

Keywords: Palestine, Turkey, Ottoman, Ornamentation, palaces

ÖZ

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Yapıyı, yapımcılarını ve kullanıcılarını anlatan süslemeler, mimarinin önemli bir parçasıdır. Bu araştırmada Doğu Akdeniz'de Mısır, Yunan, Roma ve İslam dönemlerinden süslemenin gelişimi incelenmiş ve Filistin'deki süslemelerin yanı sıra Türkiye de ayrıntılı bir şekilde incelenmiştir. Analizin gerçekleştirilebilmesi için sembolizm ve süs sınıflandırma konseptlerinin gözden geçirilmesi gerçekleştirilir. Ayrıca, Doğu Akdeniz bölgesinde süslemeler, farklı medeniyetler, kültürler ve toplulukların üyelikleriyle zengin. Bu nedenle, çalışmadan, Filistin ve Türkiye'deki süslemelerin, benzer kültürel geçmişlerden etkilenip her ülkenin tabiatını ve topluluğunu koruduğu açıkça görülüyor. Dört sarayda süslemelerin kullanıldığı Türkiye ve Filistin'den seçilmiş vakalar; Topkapı Sarayı (İstanbul, Türkiye), Nemr Sarayı, Albulhadi Sarayı ve Toukan Sarayı (Nablus, Filistin). Analiz sonuçları, her iki ülkedeki süslemelerin stilleri, sınıfları, türleri, geometrisi ve eklemelerinin birkaç benzerliğe sahip olduğunu gösterirken ana farklılıklar renk, karmaşıklık ve toplumsal statü etkisi üzerinde bulunmuştur.

Anahtar Kelimeler: Filistin, Türkiye, Osmanlı, Süsleme, Saraylar

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CHAPTER 1

INTRODUCTION TO ORNAMENTS AND THE STUDY

There is no doubt that architecture is a reflection to more than the structure itself. Therefore, by studying the architectural styles and beautifying elements, several factors can be understood about their background and influencers. Moreover, ornamentations are part of the interior and exterior architecture elements that reflect the culture and affiliations of the inhabitants. This chapter provides an introduction to the study, along with the scope of the case study.

1.1 Thesis Problem

Ornament in architecture conveys more than its beautifying purpose that can be influenced by the historical, cultural and social factors. Therefore, ornaments can provide us with deep meanings that help to understand its affiliations and relation to the status and the culture of the inhabitants (Siwalatri, Prijomoto, & Sentijanti, 2012). Moreover, the Ottoman empire had influenced many regions around it, beside its power center, which currently lies in Turkey. However, most of the studies focused on cases within the local context of the extended Ottoman regions such as Egypt and Palestine. Furthermore, there has been many missing parts in studying the ornamentations and architectural elements, while linking them to the influence of political, cultural and social elements of the related period. Thus, the problem of this study mainly emerges from:

1. Lack of scientific documentation and publication of the Palestinian-Ottoman sites, especially the architectural designs and elements.

2. Lack of architectural analysis of Palestinian-Ottoman palaces, in relation to its architectural artistic origins and affiliations.
3. Lack of studies that link the interior art in Palestine that was founded during the Ottoman period of the country to its origin and influencers in Turkey.

Therefore, this study identifies a gap in the literature that is aimed to be filled by selecting cases from Palestine and Turkey, in order to understand their similarities and differences from an architectural point of view.

1.2 Aim and Objectives

The main aim of this research is to analyze the architectural ornaments in the Ottoman palaces in Palestine and Turkey by reflecting the input factors, such as; political, environmental, cultural and social factors, and the output elements as ornamentations, and perform an architectural comparison to document similarities and differences. Thus, the main objectives of this study are as the following:

1. To study the ornaments types and learn the analysis and comparison techniques from the literature.
2. To study and document the Palestinian ornaments from the Ottoman era in the palaces that were built for the Ottoman leaders in Palestine at that time.
3. To study and document the Turkish ornaments from the Ottoman era in the palaces that were built for the Ottoman leaders in Turkey at that time.
4. To study the factors that affect the type and details of the ornaments depending on the time period, adjacent civilizations, social status, environment, and any other factors that influences the subject.
5. To compare and document the similarities and differences between the two case studies, in Palestine and Turkey, and the factors affecting them.

1.3 Scope of the Study

As a comparative research, it is necessary to select cases from both targeted countries in order to highlight the similarities and differences as part of the aim of the research. Therefore, two cases are selected for analysis within this research:

1. İstanbul, Turkey: Topkapı palace.
2. Nablus, Palestine: Alnemr, Toukan and Abdelhadi palaces.

The reason for choosing three palaces from the Palestinian case, and one palace from Turkey, is the difference in size between the two cases. Therefore, this allows the researcher to have more variety in the Palestinian palaces, which compensates for the size difference.

Moreover, the study takes into account the overall architecture of the cases; however, the main focus will be on analyzing the ornamentation used in both cases, while understanding their cultural, environmental, social and political backgrounds. Therefore, the study starts by introducing the palaces in both countries in general, their architectural backgrounds and concepts, then comparing the specific ornamentation elements in the cases.

In studying the ornamentations in the Palestinian-Ottoman palaces, the researcher depends on the documentation provided by the native researchers, who analyzed the ornamentation in several archeological sites. Nevertheless, the researcher performs a site survey for the Turkish case study in order to collect a variety of the ornamentations preserved as part of the Topkapı palace.

1.4 Thesis Structure

The structure of the research is built to serve the purpose of establishing a comparison between two different case studies, which were built under the same time era, in order to understand the influence of the several factors in which ornamentation is presented in each case. Therefore, the current chapter introduces the research problem, aim and

objectives, and the scope that is covered through the course of the research. In the literature review, the history of Palestine, and the governance of the Ottoman empire in it, is briefly reviewed to understand the historical affiliations that Palestine was under before and during the Ottoman rule. Furthermore, a review of the different palaces included in the case study is presented, in order to understand the historical backgrounds, the architectural concepts, and the accompanying factors that influenced their styles. The literature review also includes reviewing similar studies to establish the comparison criteria for the case study.

Furthermore, the third chapter reviews the concept of ornamentation in general and the several input factors that result into certain output elements in forms of beautifying ornaments. Within the same chapter, the methodology of the study is presented consisting of the analysis objectives, sample selection process, analysis structure, comparison criteria, and expected outcomes of the study. The case study is narrated in the fourth chapter of this thesis, where geometrical, cultural and affiliation analyses are performed on the selected palaces' ornamentation individually and collectively, followed by a comparison analysis to highlight the similarities and difference between the two case studies in the form of point by point discussion.

Finally, the fifth chapter provides the researchers' recommendations to document and preserve the ornamentations in both case studies and increase the awareness to their importance. Moreover, the results of the study are presented as a narrative conclusion, which sums up the overall discussion and comparison outcomes along with future exploration opportunities.

CHAPTER 2

ORNAMENTATION AND PALACE ARCHITECTURE IN PALESTINE AND TURKEY

This chapter provides a review of the ornamentations and their analysis through the literature. Thus, the main objective of this chapter is to review the ornamentation concept, its development, and classifications. Moreover, the meanings and symbolism in ornamentation are studied in order to be utilized in the analysis part of this research. Thereafter, understanding the development of ornamentations in the case studies is essential to be able to establish the historical background behind the different types and classes of ornamentations.

2.1 Development of Ornamentation

Symbolic and representative drawings were drawn on cave and dwelling walls since the beginning of humanity as a form of expression. However, the first known ornamentations were developed by the Egyptian civilizations in 4000 BC. Moreover, these ornamentations influenced the neighboring and proceeding cultures such as Babylon and Assyrian civilizations. This section elaborates on the concept of ornamentation and its meanings and development across the cultures and civilizations.

A symbol is defined as mark or form written or drawn to represent a person, object or process based on reality. Rimmer (1997) mentioned that symbolism is primarily influenced by culture, language, mythology, religion and the level of knowledge of the people owning the symbol. Another word that is used for the same meaning is “representation”, which defines the items that represent the symbols and carries a close meaning to symbolism. Therefore, it is evident that human cultures used symbols in ornamentation to represent the depth of their entity or to highlight an aspect or an object related to them. In ornamentation, the different cultures used shapes, lines and drawings to represent real aspects such as the sea, the pyramids, the sun or the agriculture. Moreover, the different cultures used vegetation to symbolize a meaning (George, 2005). Table 1 shows different vegetational representation and their symbolism according to the cultures that used them.

Table 1: Vegetational symbolism in ornamentation (George, 2005)

Vegetation	Symbolized Meaning	Culture
Acacia	Permanence	Hebrew and biblical
Bamboo	Youth, Perseverance, Good luck	Chinese
Lily	Fortitude and Profusion	Greek and Assyrian
Orchid	Patience and Endurance	Babylon
Lotus	Divinity	Egypt
Hibiscus	Lust and Love	Indian
Palm	Fertility and Potency	Assyrian
Eucalyptus	Healing and Protection	Chinese
Hydrangea	Achievement	Japanese
Sunflower	Fertility, Health and Wisdom	Native American

Moreover, the colors used in ornamentation had their different meanings according to the cultures that used them (George, 2005). Table 2 shows the association with different symbolic meanings with different colors according to the geographic regions and subsequently cultures as used in ornamentalations and other architectural elements.

Table 2: Colors symbolism according to different cultures (George, 2005)

	Western Cultures	India	China	Japan	Middle East
Red	Danger, Anger, Violence and Warmth	Celebration and Weddings	Happiness and Celebration	Anger and Danger	Danger and Evil
Yellow	Caution	Cheerfulness	Honor and Royalty	Grace and Cheerfulness	Happiness and Prosperity
Green	Sexuality and Safety	Fertility and Prosperity	Growth	Future and Energy	Fertility and Strength
White	Purity	Purity and Death	Sorrow and Purity	Death and Sorrow	Purity and Sorrow
Blue	Masculinity and Calmness	Power	Strength and Power	Villainy	Depth
Black	Sexuality, Death and Evil	Evil	Evil	Evil	Mystery and Evil

As ornamentalations mainly use symbols to represent natural, social and religious forms through drawings and color, it is important to classify the different symbols in order to be able to interpret them in an analytical study. Danesi (2004) defines the term semiotics as the study of sign within a certain society, which means their cultural and social meanings, making the discipline as part of social psychology. Furthermore, Sebeok (2001) divides signs into six main categories, which are:

1. Signals: a sign that triggers in a natural or artificial way a reaction from the receiver.
2. Symptoms: a type where the sign and reaction are coupled. Moreover, a syndrome is an example of the symptom sign with an applied rule.
3. Icons: which are divided into images, diagrams and metaphors. The icon is a visual representation of an object or a creature, and the level of representation or imitation decides if it is an image, diagram or a metaphor.
4. Indexes: a sign is called indexical as its presentation would automatically identify a certain meaning.
5. Symbols: a sign that has a limited similarity to the targeted object for representation. However, with the understanding of a certain culture, society or discipline the symbol can be understood.
6. Names: signing a certain meaning with a word. Such a type depends deeply on the language, which has its cultural and social dimensions.

Understanding the meaning of ornamentations starts from understanding their types and classifications, which relates them to the symbolism concept discussed in previous sections. Ornamentations are symbolic forms that mainly aim to beautify designs through nature imitation, visual meaning addition, or culture representation (Rimmer, 1997). The term is also explained as a decorative addition to enhance parts of a structure or parts of it, which include engraving, painting and molding symbolic forms and exclude human sculptures (RTU, n.d.). Moreover, the term ornamentation is defined linguistically as “decorative elements added to something to enhance its appearance” (Oxford, 2016).

According to International Textbook Company (1909), there are three classes for ornaments:

1. Constructive: which forms part of the object that is applied to.

2. Representative: representing nature (culture, politics, geography, social status can be included under this class)
3. Decorative: emerging from a sole purpose to please the eye.

There are three important terms in ornaments' analysis (International Textbook Company, 1909):

1. Style: a term that indicates the period or nationality of the ornament.
2. Class: a term that indicates a subdivision of an ornament style.
3. Type: a term that indicates the natural form, which the ornament is derived from.

2.2 Brief History about the Middle East and Possible Effects on Ornamentation and its Symbolism

The Middle East region is considered one of the diverse areas in the world due to the fact that there were many civilizations that occupied it over more than 6000 years. There are several studies around the world that studied and analyzed the ornamentations in different locations, empires and culture. Analyzing ornamentations requires a deeper insight to the culture of the people owning the ornaments, as well as the influencing cultures and religions that may have affected the styles and their complexity. One of the eldest documentations of ornamentations worldwide is a book by Owen Jones, published in 1868. Jones documented ornamentations from several cultures including Egyptian, Assyrian, Persian, Greek, Roman, Byzantine, Arabian, Turkish, Indian, Chinese, Hindoo, Celtic and Italian. The book also analyzed the different ornamentation styles briefly indicating their similarities and difference from influencing cultures and styles (Jones, 1868).

For the purpose of this research, the researcher reviews the Egyptian, Roman, Byzantine, Arabian (Islamic), Turkish, Greek and Persian ornamentation comparison by the author,

which are nominated styles that could have influenced the ornamentations at the targeted case studies in the significant study period.

2.2.1 Reflection Effect of Architectural Styles on Ornamentation

There are six main factors that affect the architectural style of a structure, which subsequently affect the ornamentations applied to it (International Textbook Company, 1909):

1. Geographic influence, including living means and the way a certain civilization communicates and transports to other areas.
2. Geologic influence, affecting the building quality and material, and the extent of the urbanization.
3. Climatic influence, determining the structure characteristics such as opening sizes and walls and roofs' shapes.
4. Religious influence, impacting the habits and the beliefs of the civilization.
5. Political influence, reflected in the sizes of the structures and this distinction from other civilizations and within the civilization.
6. Historic influence, which means the traditions and accomplishments of the previous inhabitants of the civilization.

Furthermore, in order for an ornamentation to be considered fit with the architectural style, it has to satisfy four essential conditions (International Textbook Company, 1909):

1. Suitable for the object's purpose: the ornamentation shall empower the aim of from the structure's and its elements' existence.
2. Suitable for the object's position: the orientation of the structure shall be taken into consideration including its latitude.
3. Suitable for the object's material: the details and the structure of the ornamentations shall be compatible with the material of the structure.

Suitable for the ornamentation's material: the style of the ornamentation shall be compatible with the material used to construct it.

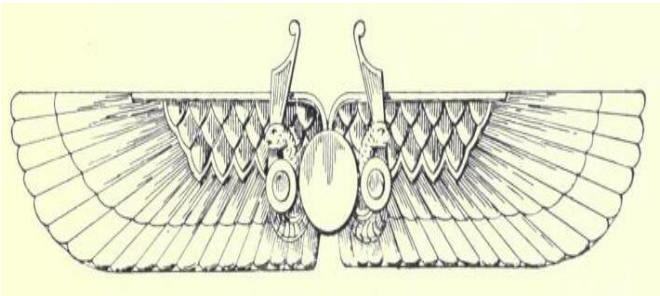

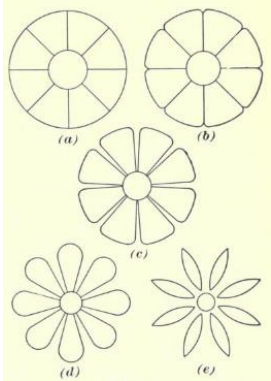
2.2.2 Egyptian Period

As one of the oldest civilization known to human, the Egyptian civilization is known to have invented the ornamentation art 4000 years BC, where ornamentations can be found in the pyramids, temples and other significant structures (Dunham, 1958). Figure 2.1 shows an Egyptian ornamentation from the ancient civilization.



Figure 2.1: Ancient Egyptian ornamentation (Bitrot, 2008)

The ancient Egyptian ornamentations contained several elements including the lotus flower, papyrus plant, winged disk (Figure 2.2), Scarabaeus (Figure 2.3) and Rosette forms (Figure 2.4) (International Textbook Company, 1909).

 <p>(a) Figure 2.2: Winged disk from Egyptian ornamentation (International Textbook Company, 1909)</p>	<p>The winged disk is an Egyptian symbol for the eternity of the soul, consisting of the sun as the center carried by wings. Other elements can be added to symbolize the Egyptian Gods and Pharos. The Symbol was also used in Persia and Anatolia for royalty and power (Egyptian Gods, 2011).</p>
 <p>(b) Figure 2.3: Scarabaeus from Egyptian ornamentation (International Textbook Company, 1909)</p>	<p>The Scarabaeus symbol of the beetle holding the solar disk is one of the eldest Egyptian symbols for earth and sun, and was used as a symbol for the Egyptian God Khepri. The meanings of the ornament are creation, Rebirth and Protection (Weiss, 1927).</p>
 <p>(c) Figure 2.4: Rosette forms from Egyptian Ornamentation (International Textbook Company, 1909)</p>	<p>The Rosette forms came in different shapes and types to symbolize the lily and lotus, which were important symbols for the Egyptian. The Rosette forms symbolized where the Gods came, sun, dynasty, fertility and divinity (Aleff, 2015).</p>

The elements presented in Figure 2.4 are considered important as it is found in many Ottoman-Palestinian ornamentations (Kanaan, 2010).

2.2.3 Greek-Roman Period

The Greek ornaments are said to be taken from early Assyrian and Persian ornaments, where they worked on perfecting their designs and deliver them through both engraving and painting (Jones, 1868). The Greek ornamentations were of two main styles; vegetation ornamentations, which mainly were put on the column heads and arches, and systematic wave ornaments, which were more common symbolizing the sea waves - and called Meander in some sources - and are spread through other cultures (Meyer, 2012), as shown in Figures 2.5 and 2.6.

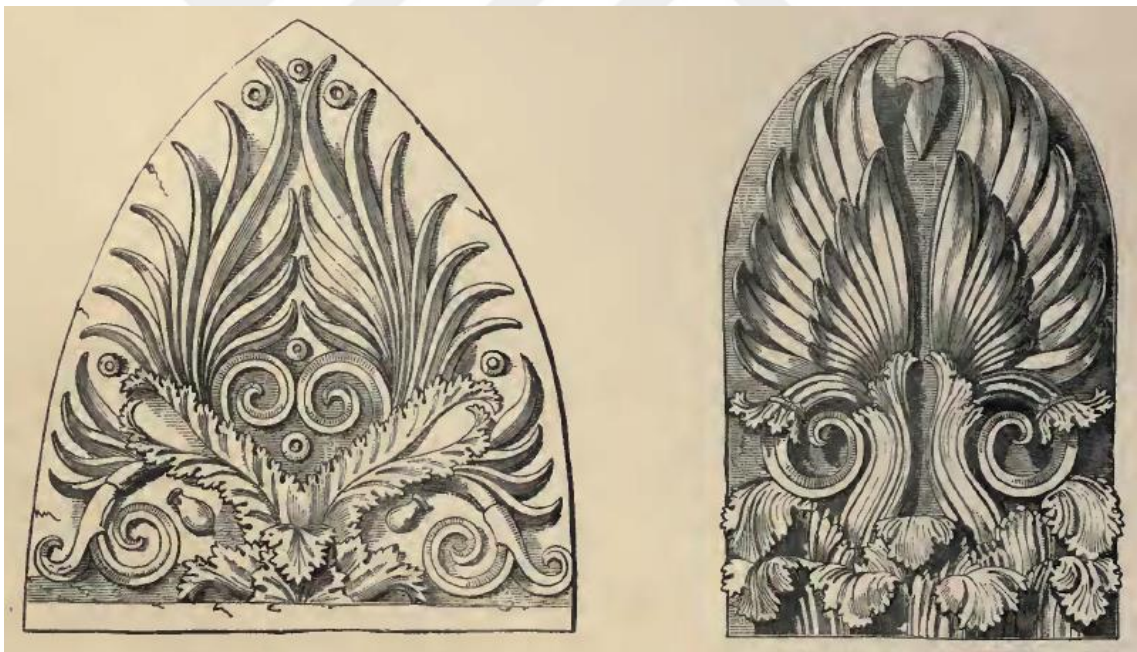


Figure 2.5: Vegetation Greek ornaments perfected from Assyrian and Persian origins (Jones, 1868)

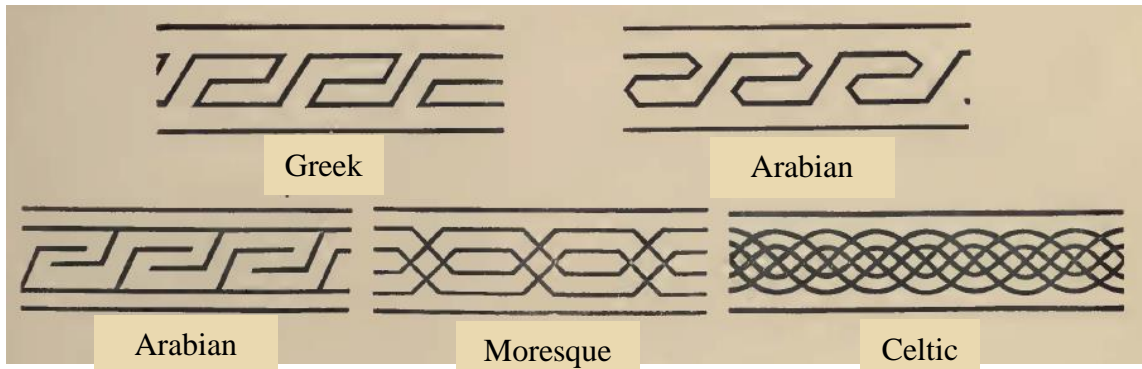


Figure 2.6: Comparison of sea waves ornaments in Greek and other cultures (Jones, 1868)

Proceeding the Greeks, the Romans were highly influenced by the Greek ornamentations (Batterham, 2006). However, the Romans were mainly focused on building big structures that showed their self-glorification and beautifying their structures with huge ornamentation pieces that reflected the same purpose. Moreover, the Romans focused on symbolizing the acanthus plant and they have put it in their ornamentations in different sizes and directions (Jones, 1868). Figure 2.7 shows a Roman ornament plate from Rome and the influencing acanthus plant.



Figure 2.7: Common Roman ornamentation (left) inspired from acanthus (Jones, 1868)

The Romans have put their ornamentations on important structures and temples. The locations of the ornaments played a major role in its structure (Meyer, 2012). For instance, ornaments inspired by the acanthus on column heads shows an orientation of growth from the column into the column heads as shown in Figure 2.8 below.



Figure 2.8: Roman acanthus column heads ornamentations (Jones, 1868)

2.2.4 Byzantine Period

Inheriting the Romans, the Byzantines paid less attention to ornamentations than their Roman ancestors. Therefore, they depended on Persian artists in beautifying their public and important structures, which was reflected into the styles used (Jones, 1868; Meyer, 2012). Figure 2.9 shows a Byzantine ornamentation on a column head from the 6th century AD.

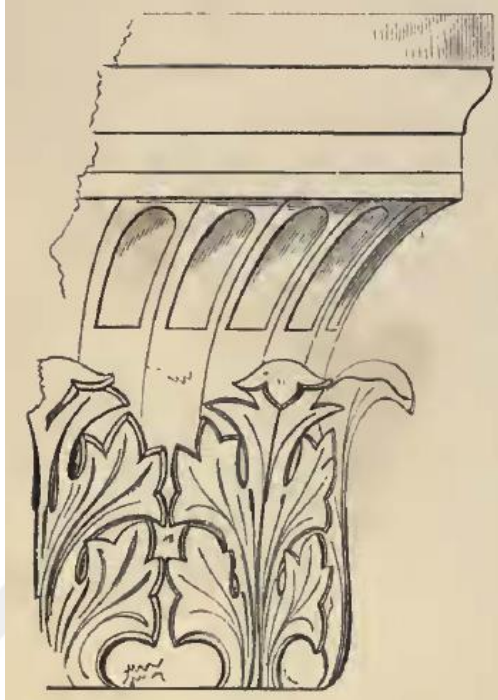


Figure 2.9: Byzantine column head ornamentation from the 6th century AD (Jones, 1868)

2.2.5 Arabian and Islamic Period

The Arabian ornamentations inherited the Roman and Byzantine structure, where Arabs tried to restore some of the fading ornaments on the existing structures. However, this maintenance operation resulted in a low-quality imitation of the original pieces, which surprisingly gave birth to new styles inspired by Persian, Greek and Roman heritage with added complexities and detailing (Jones, 1868). Figure 2.10 shows an ornamentation in a mosque in Cairo in the 9th century AD. The Andalusian palaces symbolize a state of art, where symmetric geometric and floral patterns were spread on full walls with floral accents around the arches and openings (Eggleton, 2012). Figure 2.11 shows an example from Alhambra palace in Spain. The Moorsque ornaments are the most developed Islamic styles, with the introduction of writings, fonts and symmetric patterns as shown in Figure 2.12.



Figure 2.10: Arabian ornamentation in Cairo inspired by Roman style (Jones, 1868)



Figure 2.11: Moresque ornamentations from Alhambra palace (Eggleton, 2012)



Figure 2.12: Moresque ornamentations with writings and symmetric patterns (Jones, 1868)

Based on the Islamic teachings, the Arabic and Islamic artists avoided using living beings in their ornamentations. Therefore, the ornaments through the Islamic periods mainly have focused on using four main elements, which are (Imran, 2014):

1. Calligraphy: the Arabic language and writing are perceived as a source of pride and power by the Arabic culture. Therefore, the artists unleashed their creativity into creating different fonts and calligraphies that combined the beauty of the word and the beauty of the form. Understanding the calligraphy ornaments require understanding both beauty elements, where this type symbolizes unity, power and beauty.
2. Vegetational ornaments: the main purpose of using this type of ornaments is to connect the manmade structures that were built in the Islamic periods with nature. There were different vegetational elements that were associated with type including leaves, flowers, fruit and branches, which are used differently by different artists according to their perception and imagination (Batterham, 2006). The symbolism of this type of ornaments were growth, power and diversity, which are meanings shown in through the elongation of vegetational elements and their extension on full surfaces and the usage of different elements within the same artistic piece.

3. Geometric designs: from an aesthetic point of view, this type of ornamentation was mainly adopted to create a beautifying containment for other ornamentation elements, as well as symbolizing harmony, complexity and divinity. The artists used several basic techniques in creating geometric ornaments by using basic shapes and elements such as lines, squares, circles, triangles and multisided two-dimensional shapes through repetition, reflection and rotation. The geometric patterns were meant to create balance in the art work as it provides comfort to the eye. Nonetheless, the different elements of geometric ornaments were used differently throughout the Islamic periods:
- a. Circles: Umayyads were the first to use and develop this shape into different ornaments and mainly in window protections. The palaces that were built in Syria, such as Qasr alhayr, show several window panels using the circular shape, as shown in Figure 2.13.

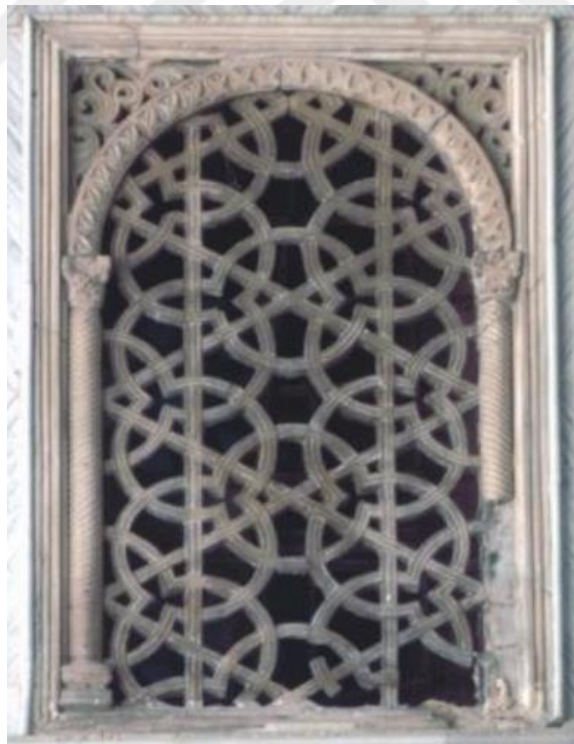


Figure 2.13: Usage of circular shapes in Umayyad palaces in Syria (Imran, 2014)

- b. Multisided and star form: which their complex patterns were developed by Muslim artists in the twelfth century for the purpose of filling the emptiness and adding beauty to the different elements of significant structures, such as domes and wall surfaces. Figure 2.14 shows an example of this category from the Sultan Qaitbay mosque in the Mameluke period.



Figure 2.14: Multisided and star forms used on the dome of Qaitbay mosque in the Mameluke period (Imran, 2014; Abdullahi & Bin Embi, 2013)

- c. Diamonds and squares: these elements were meant to add unity and uniformity to the structures, and a further linear dimension into the beautifying pieces.
4. Figure representation: despite the opposition for this type of ornamentation by the Islamic scholars, which is based on the Quran and teachings of the prophet, some artists used animal and plant art pieces as ornamentations in few instances in the Islamic period.

During the Umayyad era, the focus was mainly drawn to the vegetational ornaments symbolizing the nature beauty of the region with the use of some geometric patterns,

which were used in several structures that are currently existing in Syria and Palestine. After that, the Abbasid continued to use vegetational and floral motifs in their ornamentations. In the ninth century, the Muslim artists started using the geometric patterns more widely in the Abbasid palaces, which then became a trend that moved to Egypt and Andalusia where they were developed with a higher degree of complexity. The Fatimid and Seljuks used more complex geometric patterns such as hexagons and octagons, and six and eight points stars on mosques and palaces. The geometric shapes were used thereafter solely and combined with other forms to create different pieces and beautifying ornamentations (Abdullahi & Bin Embi, 2013).

2.2.6 Turkish Ornamentations

Furthermore, the Turkish ornamentations were mainly inspired by Arabian and Persian styles, which were floral, in addition to details from Roman and Byzantine styles. Moreover, Turkish palaces and important structures were mainly constructed by European architects. Many ornaments have been influenced also by Moresque styles from Andalusia (Jones, 1868). Figure 2.15 shows a continuous Turkish ornamentation pattern.



Figure 2.15: Turkish continuous pattern ornamentation (Jones, 1868)

Moreover, the Turkish ornaments have been developed during the Seljuk time, and additionally was influenced by several styles including Indian and Chinese ornamentations. The Turkish developed their style from other backgrounds such as Kyrgyz and Uyghur, which resulted in developing several unique styles, including:

1. Rumi: which is an ornament that was developed from a bird form originating from Uyghur culture around the 9th century. The style was also combined with Hatai motifs influenced by the central Asian and Chinese styles. In the 15th century, the Rumi style became more developed by losing the animal appearance, which concealed its origin (Keskiner, 2005). A representation of the rumi ornamentation is available in Table 3 (Page 26).
2. Tulip and hyacinth flowers: which was presented passionately by the Ottoman in the sixteenth century in all types of ornamentations since the middle of the sixteenth century (Necipoglu & Payne, 2016).
3. Palmate and hastate leaves: which the Ottoman developed from previous Islamic ornamentation used by Umayyads and Abbasids into different and various forms (Abdullahi & Embi, 2015).
4. Chintamani: which is a style derived from Buddhist and central Asian cultures and migrated to Anatolia during the fourteenth century. The Style symbolizes strength and power consisting of balls of various forms over clouds, and used in Turkish ornaments of several applications including tiles and fabric used for the Ottoman Sultan's cloths (Tea and Carpets, 2009).

2.2.7 Persian Ornamentations

Moreover, the Persian ornamentations in the post-Islamic era were of mixed styles with floral motifs integrated with symmetric patterns such as triangles, lines and squares increasing the level of size and complexity of the pieces, as shown in Figures 2.16 and

2.17. The Persian-Islamic ornamentations are famous for their complexity and high details similar in nature with the previously reviewed Arabian ornaments in Cairo.

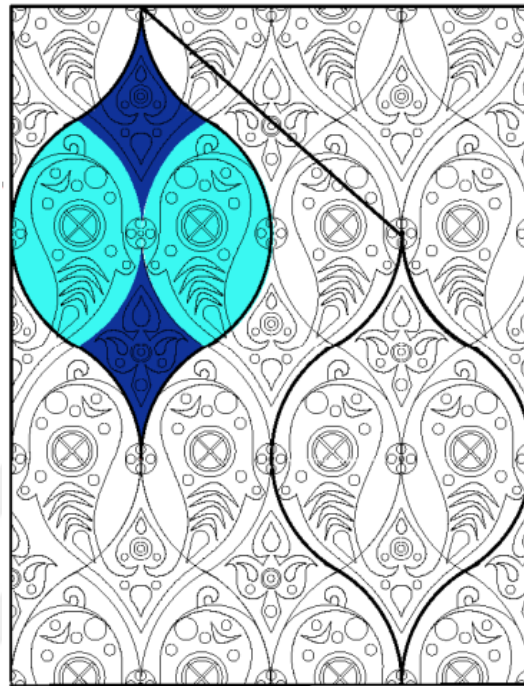


Figure 2.16: Persian ornamentations from the 12th century (Kharazmi & Sarhangi, 2013)

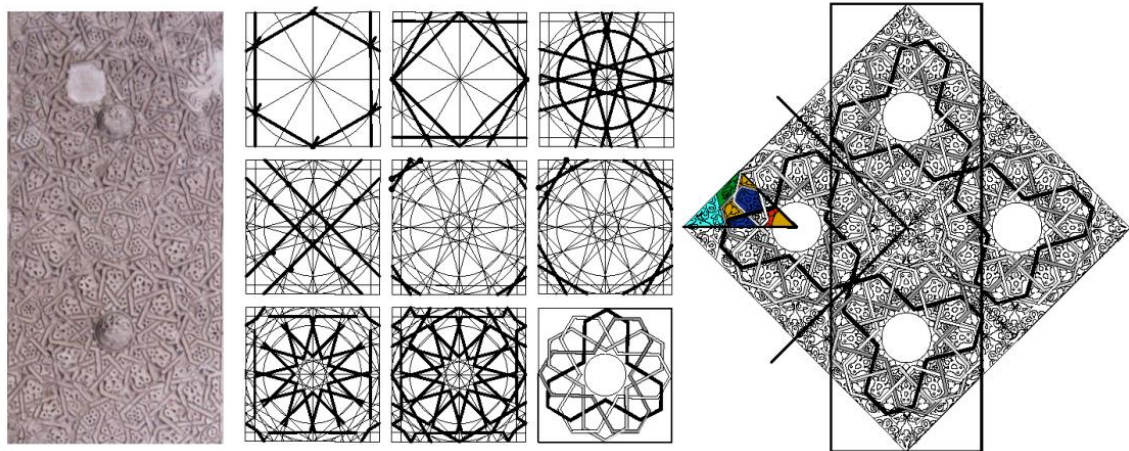


Figure 2.17: Geometric analysis of symmetric pattern Persian ornamentation from the 12th century (Kharazmi & Sarhangi, 2013)

2.3 Summary of Islamic Ornamentations

There are many architectural styles that influenced the ornamentation from the different civilizations that occupied the Turkish and Palestinian territories. Therefore, each of these styles may have had an extent of contribution to the styles that were used in the important structures around the two case studies. However, it is noted that each preceding civilization used similar styles from the previous ones, while some of them developed it and others preferred to focus on the structure, rather than the beautifying features.

Moreover, the styles used by the Islamic empires since the 7th century AC passed through the phase of imitation of other architectural styles, to the phase where a developed style appeared, which made the different structures unique. The Arabian and Islamic ornamentations were mainly focused on vegetational, symbolic and geometrical designs, which were mainly influenced by Greek, Persian, and Roman architectural styles.

The Islamic ornamentations have been developed since the Umayyad era from using the vegetational forms into developing the geometric forms that received their complexity during the Fatimid and Mameluke periods. Each era contributed into producing more complex designs by increasing the complexity of the simple forms used in the pieces. Table 3 below provides a summary of the different ornamentations according to their types used during the Islamic eras.

Table 3: Summary analysis of the Islamic ornamentations

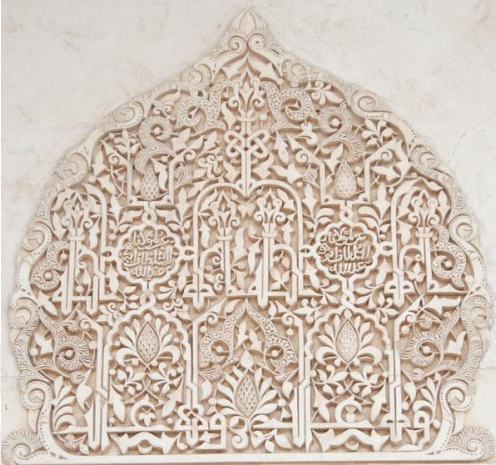

























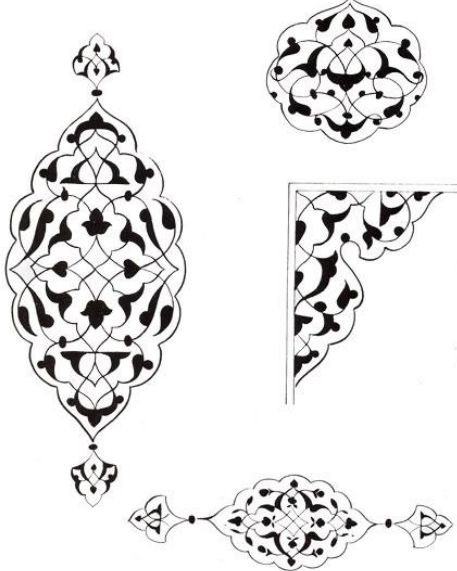
Type	Illustration	Description
<p>Calligraphy</p>	 <p>(Medlej, 2015)</p>	<p>Key versus from Quran, Hadith and Islamic used sentences, which are developed with beautifying additions that connects letters to form a collective ornamentation.</p>
<p>Vegetational pattern</p>	 <p>(Abdullahi & Embi, 2015)</p>	<p>Usage of different types and forms of natural vegetational elements including hyacinth, tulip, lotus, and carnation flowers. The style also included using the leaves and branches of the different vegetational elements according to the interpretation of the artist.</p>

Table 3: Summary analysis of the Islamic ornamentations

Type	Illustration	Description												
<p style="text-align: center;">Geometric Patterns</p>	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="font-size: small;">6-point Geometrical pattern</th> <th style="font-size: small;">8-point Geometrical pattern</th> <th style="font-size: small;">10-point Geometrical pattern</th> </tr> </thead> <tbody> <tr> <td> Hexagon</td> <td> Octagon</td> <td> Decagon</td> </tr> <tr> <td> 6-point Star</td> <td> 8-point Star</td> <td> 10-point Star</td> </tr> <tr> <td>—</td> <td> 8-fold Rosette</td> <td> 10-fold Rosette</td> </tr> </tbody> </table> <p style="text-align: center;">(Abdullahi & Bin Embi, 2013)</p>	6-point Geometrical pattern	8-point Geometrical pattern	10-point Geometrical pattern	 Hexagon	 Octagon	 Decagon	 6-point Star	 8-point Star	 10-point Star	—	 8-fold Rosette	 10-fold Rosette	<p>Basic elements such as circles, squares, triangles were used, in addition to more complex shapes such as hexagons and octagons. Star forms were also used with six and eight points. The elements were used separately and collectively depending on the created style.</p>
6-point Geometrical pattern	8-point Geometrical pattern	10-point Geometrical pattern												
 Hexagon	 Octagon	 Decagon												
 6-point Star	 8-point Star	 10-point Star												
—	 8-fold Rosette	 10-fold Rosette												
<p style="text-align: center;">Figural representation</p>	 <p style="text-align: center;">(Keskiner, 2005)</p>	<p>Minorly used in some structures until the Mamelukes' era. Then developed during the Seljuk and Ottoman eras by using representations for birds and animals, which is clear through the rumi ornamentations (adjacent picture), where the dark portions symbolize the bird form.</p>												

CHAPTER 3

HISTORY OF PALACES AND ORNAMENTATIONS IN THE CASE STUDIES

This chapter provides the history of the Palestinian and Turkish palaces from the Ottoman era in general and specifically for their ornamentations. Furthermore, the history of Palestine and Ottomans is briefly discussed in order to provide the historic background of the research. This chapter connects the previous chapter, which discussed the ornamentations development in the case studies' region in general, with the specific ornamentations and palaces' development and history in Palestine and Turkey.

3.1 History of Palestine

The early settlement in the land of Palestine was known as “Canaan”, which is a civilization established around the 30th century BC. The Canaanites established a state that included Palestine, Lebanon and parts of Syria. During the Egyptian expansion in the 12th century BC, the land was annexed by force to the Egyptian empire under the pharaoh Rameses III (Mark, 2010). While the Northern cities, currently located in Lebanon, were still inhabited by the Canaanites, who later established a civilization called the Phoenicians, the Southern cities lying on the Palestinian Mediterranean coast got controlled by immigrant fighter tribes from the southern coast of Asia Minor (currently part of Turkey) and Crete Island (currently part of Greece), known as the Philistines, ten years after the Egyptian control (TimeMaps, 2014). Since that time, the land became known after them as “Philistine”, “Filastin”, or Palestine.

Following their exile from Egypt, the “Israelites”, which is the name given to the Jewish people since their inception, started a conquest to capture Palestine as the holy land. The wars continued between the “Israelites” from a side and the Canaan and Palestinians on

the other side. Moreover, the Jewish were forced to leave the land to the east of the Jordan river until they came back under King David, also a prophet, who ruled the land, followed by his son Suleiman between 1010 to 931 BC. The Israelites kingdom got abolished by the Assyrian empire, followed by the Babylon, Hellenistic and Roman empires, who controlled the land of Palestine consecutively, while the Jewish people were given a self-governing identity, lost the control of the land, and many of them had to leave due to the tough treatment (Al-Ghadiry, 2013).

The Roman Empire ruled the land of Palestine from 63 BC to 636 AC, until the Muslim army succeeded in capturing Jerusalem peacefully by giving the freedom to the Christian leaders to practice their religion and remain under the protection of the Muslims. Since that time, the land of Palestine was developed by the several Islamic Caliphates by building mosques, palaces, trading hubs and ports to utilize the access of the land to the Mediterranean. Although the land and its people suffered difficult times during the crusades wars between 1095 and 1187 AD, which were motivated by the European church and the greed of the European kings, the Muslims retained the land back under their control by the leader of the Ayyubid State; Salah Al-Din (Al-Ghadiry, 2013).

Furthermore, the control over the land of Palestine kept shifting between the Muslim states, until the Ottomans conquered it from the Mamelukes, a Muslim state centered in Egypt, in 1516 AD. The Ottomans succeeded in developing Palestine administratively and economically for over 400 years leaving remarkable landmarks, until the British occupation in 1918 (Lee, 2000). Britain worked on reinforcing the Jewish illegal immigration to the land, as well as empowering the Jewish military capabilities, which led to the foundation of “the State of Israel”, and the murder and exile of significant Palestinian population (Barin, 2014).

It is worth mentioning that it is known to be challenging to compile a timeline history of the ancient land, due to its religious and political significance, in addition to the conflicting resources, which state contradicting information. This is a result of the

occupation of the land by the Zionists, who are denying the civil and political rights of the original Palestinian population. Therefore, the Zionist resources insist that the Israelites Kingdoms lasted for more than 500 years (Lemche, 1995), while the Arabic sources prove through archeological discoveries that the Israelites kingdoms were only established during the ruling of David and Suleiman, and the presence of the Jews in Palestine afterwards was through self-governing settlements under the changing empires, which is proven through the limited Hebrew and Israelite's remaining, despite the extensive excavations carried out by "Israel" nowadays (Bahnesi, 2009). Therefore, the researcher mainly relied on the archeological supported resources to compile the history timeline of Palestine, while taking into consideration other resources.

3.1.1 Palaces in the History of Palestine

The palaces in Palestine were mainly built during the Umayyad rule between 662 and 750 AC, which mainly concentrated in the Jerusalem area and destroyed by the Israeli occupation. Moreover, the most distinguished palaces in Palestine were built between the 17th and 19th during the Ottoman rule of the territory. These palaces were mainly built for the Palestinian rich and ruling family in the Nablus region (Kanaan, 2010).

Most of these palaces have been continuously targeted by the Israeli army in order to destroy the Palestinian heritage. Although Israel is continuously trying to excavate the land of Palestine for Jewish archeological sites, there has been no success to achieve that, and no palaces were attributed to the period when the Israelites ruled the land for around 80 years during kings David and Suleiman reign (Alramlawi, 2012).

3.1.2 Palestinian Ornamentation

Furthermore, in Ottoman-Palestinian structures, there are few studies that document the architectural elements in them. Alramlawi (2012) documented Ottoman and Mamelukes ornamentations in the structures built in that period in Gaza city, which included two case studies; Bin Osman mosque that was built in the Mamelukes time and the house of Milad family that was built in the Ottoman time. For the benefit of this study, the researcher

reviews the Milad family's ornamentations in order to highlight the methodology and results of the study.

Several ornamentation designs in Milad family's house were reviewed. The author mainly focused on describing the designs, their possible origins and affiliations and the materials that were used to construct each one of them. All the ornamentation in this case study were either engraved in sand stone or formed using marble stones that formed the arches. Figure 3.1 below shows examples of the ornamentations used in the study. The ornamentations were analyzed according to the theoretical analysis techniques that were reviewed in the second chapter

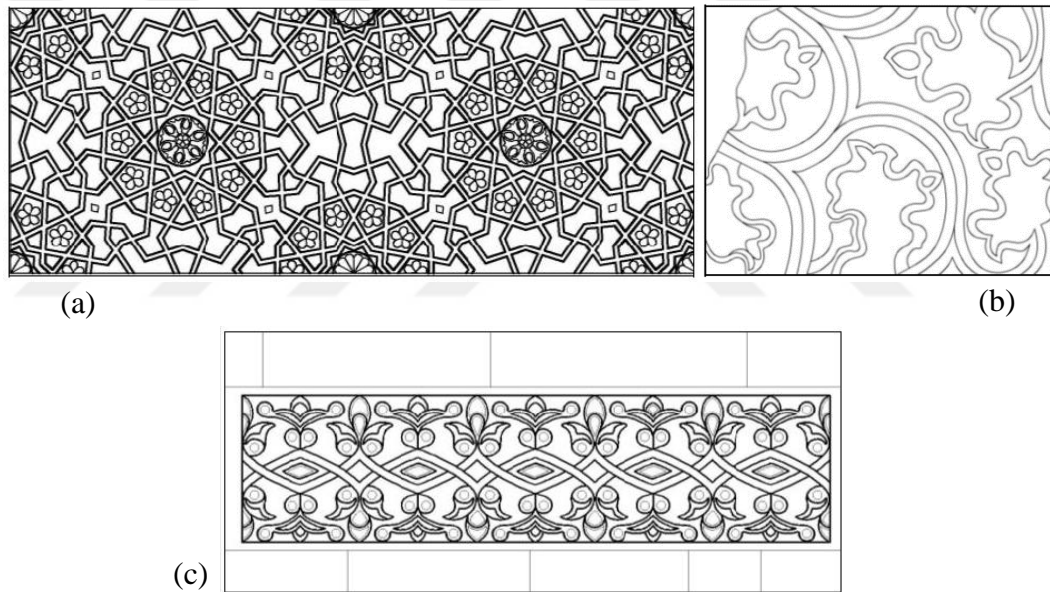


Figure 3.1: Studied ornamentation pieces from Milad family's house in Gaza (Alramlawi, 2012)

- (a) 10-point star ornamentation centered around floral motifs, which are also distributed into the spaces of the octagon using a different design.
- (b) Floral ornamentations (lobed falcate leaves)
- (c) Floral piece in stone wall using Hastate leaves.

Another study that reviewed ornamentalations in Ottoman palaces in Nablus city analyzed the ornamentalations in many palaces in the city of Nablus. Kanaan (2010) documented the three cases included in this research, which are Nemr palace, Toukan palace and Abdelhadi palace, as well as ornamentalations in other palaces including Nabelsi palace, Arafat palace and Alqasem palace. The study provided plans for the first three palaces, in addition to a survey to most of the significant ornamentalations. While this study depends on Kanaan (2010) for the documented ornamentalations in the Palestinian palaces, this study applies different analysis techniques, as well as comparing the ornamentalations with the Turkish case study. Different from the Gazan case study introduced before, the ornamentalations of the Nablus palaces were engraved in traditional Palestinian stone and using metal for handrail ornamentalations (Kanaan, 2010). Since the palaces were influenced by families from different backgrounds and built in different time periods, it would be interesting to understand the similarities and difference in the ornamentalations used in each one of them. Figure 3.2 presents few examples from the study and analysis by the present researcher.

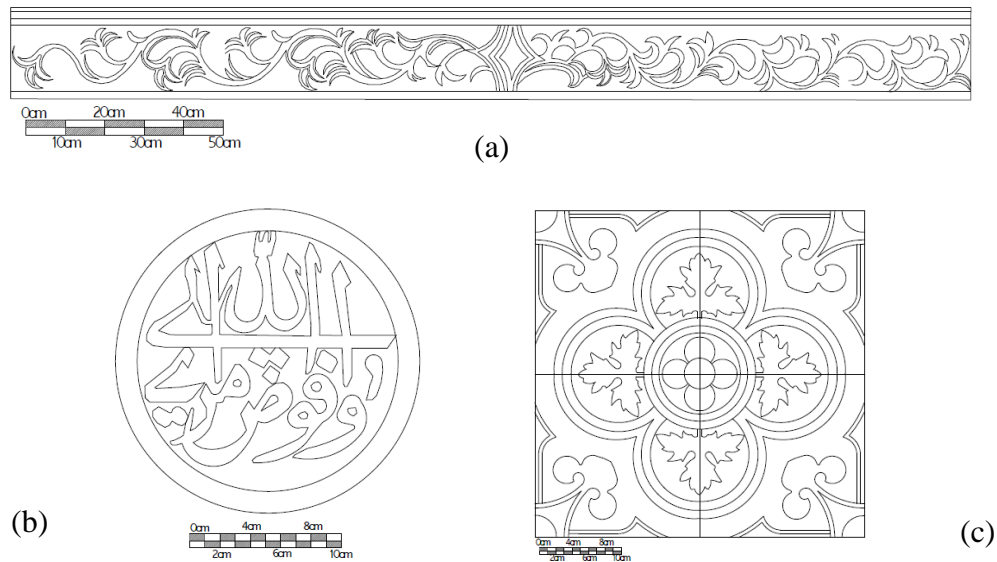


Figure 3.2: Studied ornamentation pieces from Ottoman-Palestinian Palaces in Nablus (Kanaan, 2010)

- (a) Toukan Palace: an ornamentation above the main door using Bi-lobed leaf motif.
- (b) Abdelhadi palace: Ruqa font writing reading as an Ayat from the Quran on a circular piece.
- (c) Abdelhadi palace: floral symmetric design on iznik using grape leaves and circular shapes

3.2 History of Ottoman

There are several events that can be discussed to understand the beginnings of the Ottoman Empire's conquer of Palestine. The Ottomans built their core state in the Northern Anatolia following their immigration from Central Asia around 1050 AD and their alliance with the Seljuk State, which was controlling an area extending from Persia to Egypt, and winning Asia minor over the Byzantine empire, which is an achievement attributed to the Turks. Nonetheless, towards the weakening of the Seljuk State, Asia Minor was divided into several states controlled by the Turks, of which Osman I controlled one of them, while Egypt and Palestine was captured by the Mamelukes (Imber, 2002).

While the Ottoman Empire suffered from several challenges including a civil war until the year 1450, the Ottomans began their expansion conquest afterwards of which they were able to build an empire that included significant parts of the European continent reaching to the borders of Vienna, and the Southern Mediterranean coast reaching to Algeria (Agoston & Masters, 2009). By pushing the Safavid Empire's borders towards the East over continuous battles, the Ottoman Empire was able to establish direct land borders contact with the Mameluke State. The Ottoman sultan, who was Selim I at the time, continued weakening the Mamelukes positions in the Levant area, until totally conquering the Aleppo, Damascus and Jerusalem in 1516 without relevant resistance (Imber, 2002). Figure 3.3 shows the expansion of the Ottoman Empire in different time periods and the capture of Palestine under the Sultan Selim I.

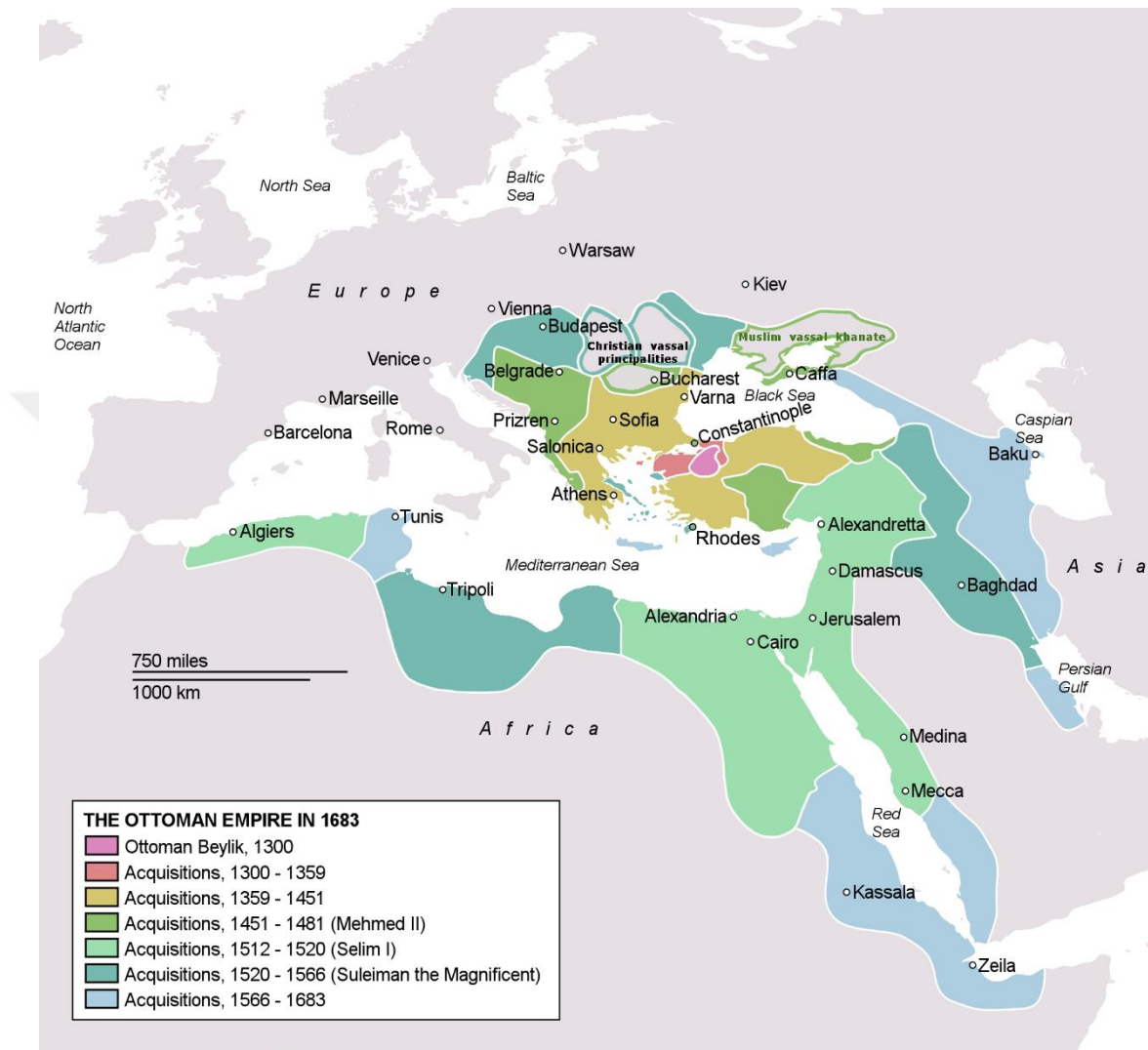


Figure 3.3: Expansion of Ottoman Empire and control over Palestine by Selim I (CUL, 2017)

As the Ottoman army continued its movement towards Egypt after Palestine, they succeeded into annexing it under the Ottoman Empire. Thereafter, the Ottomans established two regions of Palestine; Jerusalem and Gaza, and divided them into 24 Sanjaks, administrative areas (Turkpress, 2015). Furthermore, the Ottoman governance in

Palestine left many traces which includes mosques, markets, traditional baths and palaces. Nevertheless, as an ancient land that was controlled by several powers over the years, the Palestinian architecture under the Ottoman rule was impacted by the ancient Palestinian architecture during the Greek and Roman ruling, the Islamic architecture, and the Ottoman Turkish style (Al-Kalhout, 2015).

3.2.1 Palaces in the History of Ottoman

Many palaces were built during the Ottoman rule in Turkey. However, the most remarkable palaces are located in İstanbul. In addition to Topkapı palace, which is discussed in the third chapter of this research, the Ottoman sultans started building palaces in different parts of the city exhibiting the luxurious lifestyle they possessed (Arsiya, 2015). Most of the spreading Ottoman palaces in Istanbul including yıldız, küçüksu and Dolmabahçe were built in the 19th century for summering and leisure. Nonetheless, the residence of the Sultan was changed from Topkapı to Dolmabahçe in 1856 in order to provide the ruling family with the luxury that the Topkapı palace lacked. The Dolmabahçe, which is the biggest palace in Turkey, consists of 285 rooms and 120 other areas between halls, hammams and toilets. The palace was also decorated with 35 tons of gold and built for a contemporary European architectural style (Arsiya, 2015; The TGNA Foundation, 1993).

3.2.2 Ottoman Ornamentation

Although the Turkish and Arabic cultures are known for their attention to beautifying details in architecture, which is proven through the many structures that are taken as examples for architects, resources that analyze ornamentations in the study targets are not common. However, there are few studies that could help forming an idea about the available ornamentations in Turkey.

Cromwell (2008) studied the geometry in Penrose tiles, which it is defined as a form of ornamentations, in Islamic construction, including examples from Turkish architecture in general and Topkapı palace specifically. Although it not the fact that they are made

manually that only makes them unique, the Penrose tiling in the Topkapı balance resembles accuracy and satisfying geometry. The styles mainly depend on start motifs through construction polygons with different number of points and angles, making each design different than the other.

The Penrose geometry can also be applied to stone or painting ornamentations using the same concept. Therefore, Cromwell (2008) provides examples of designs that are using different center points and line angles forming the several designs. Figure 3.4 shows the variation of two ornamentation designs through the change of the polygon angles.

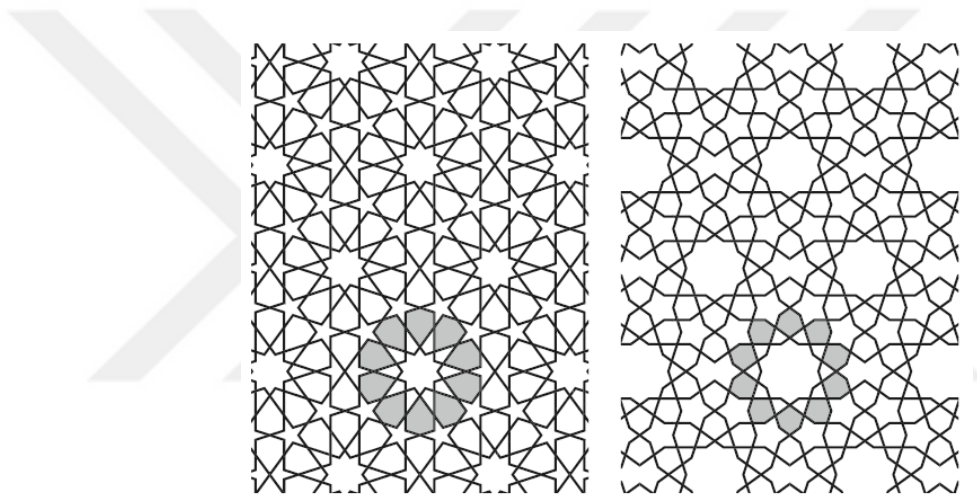


Figure 3.4: Variation of ornamentation design through polygon angles (10-point star, Left: 72° and Right: 54°) (Cromwell, 2008)

The researcher also indicated multi-level designs, where more than ornamentation design overlap in order to form a different unique design by superimposing one on top of the other. One of these designs are available using Penrose in the Topkapı Palace museum, which is illustrated in Figure 3.5.

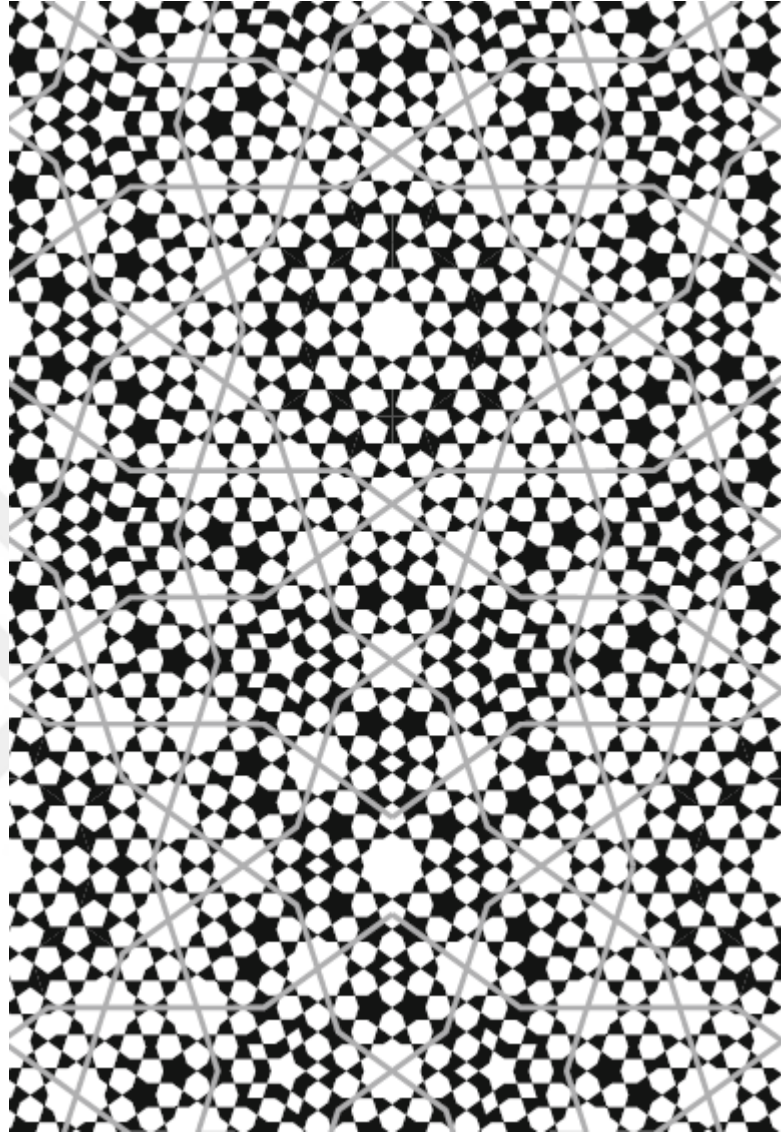


Figure 3.5: Two-level ornamentation in Topkapı Palace museum (Cromwell, 2008)

Another important element in Turkish ornamentations is the vegetal ornamentations, which formed an essential part of important pieces in different structures during the Islamic and Ottoman eras. Abdullahi & Embi (2015) provide a timeline evolution of the vegetal elements in ornaments during the Islamic empires from the Umayyads in 660 AD

to the Ottomans until 1923. The source mentions the Yeşil mosque in Bursa as one of the first structures that used the floral motifs in green and blue colors in the Ottoman era. This mosque was designed, including its ornamentations, by Persian architects, who ruled the trade in the 15th century under the Ottomans.

In the following century, the Ottomans were given the gift of Turkish architects, such as Mimar Sinan, who built many of the important structures at the time including Fatih mosque, Beyazid II complex and Shehzade mosque. Mimar Sinan paid less attention to floral designs and adopted using minimal bars with Quran citations and fonts. Nevertheless, the Rustem Pasha mosque was pioneering with the use of tulip flower and hyacinth flower motifs through iznik tiles, which were also used in Selimiye complex and Sokollu Mehmed Pasha mosque as shown in Figure 3.6 (Abdullahi & Embi, 2015).



Figure 3.6: The use of tulip and hyacinth motifs in Ottoman structures (From left to right: Rustem Pasha mosque 1563, Selimiye complex 1574 and Sokullu Mehmed Pasha mosque 1578) (Abdullahi & Embi, 2015)

Other than using the abovementioned floral motifs, the Ottomans architecture included the use of Falcate leaf, Lobed Falcate leaf, Bi-lobed leaf, Elongated Bi-lobed leaf, Palmate and Hastate leaves, Lotus flower (introduced first during the Seljuks period), Carnation flower (introduced first during the Mameluke time), Peony flower, and Saz leaf

(Abdullahi & Embi, 2015). Figure 3.7 introduces the aforementioned floral motifs used by ottomans in the same order mentioned, from left to right and from top to bottom.

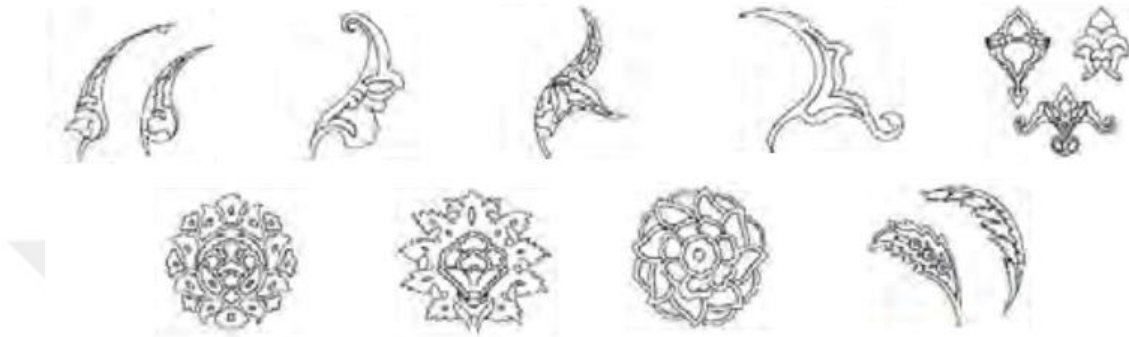


Figure 3.7: Floral motifs used in Ottoman ornamentations (Abdullahi & Embi, Evolution of abstract vegetal ornaments in Islamic architecture, 2015)

CHAPTER 4

CASE STUDY

This chapter provides the history of the Ottoman Palaces in Turkey and Palestine, along with a description of their parts and divisions. Furthermore, the historical background narrated, along with the ornamentations discussed in the second and third chapters, would complete the needed literature background in order to be able to analyze the ornaments and compare them between the case studies.

4.1 Description of the Palaces

In this study, palaces are selected from both Turkey and Palestine in order to establish the analysis and the comparison between the ornamentations used in them. However, due to the differences in size and variety, three palaces are selected from Ottoman-Palestine to represent the Palestinian case, while the Topkapı palace is selected in Ottoman-Turkey to represent the Turkish case. This section aims to introduce the selected palaces in terms of their history and the architectural information available in the literature.

4.1.1 Ottoman Palaces in Turkey and Topkapı Palace

The palace was built by the order of Sultan Mehmed, the Fatih, as the main palace meant for the Ottoman ruling family's residences and the government court and offices. The site

of the palace is selected to be on an olive farm covering around 700,000 square meters, and the construction begun in 1472 AD. Since it contained many unused lands within its courtyards, the following Sultans continued to build several palaces, libraries, council courts and facilities along the years. Although the palace lost its political importance in the Ottoman empire in 1853 AD, when the sultan moved his residence to the Dolmabahçe palace, the structure is still a piece of art due to the many beautifying elements that are contained within its walls (Oz, 1983).

The Topkapi palace consists of five main elements that can be seen in Figure 4.1. (Oz, 1983):

1. First courtyard: the entrance to the palace complex, Bab Al Humayun shown in Figure 4.2, with a road connecting the first and second courtyards. This courtyard also contained the treasury, a hospital, a bakery, store house and paper storage for the palace.
2. Second courtyard: Entering from its gate, Bab Al Selam shown in Figure 4.3, was the government court location and the empire's treasury office. Moreover, this courtyard includes the kitchens of the palace, the Sultan's stable and a complex that contains a mosque, a fountain, a hamam (traditional bath), and the male servant residence.
3. Third courtyard: its gate is called Bab Al Saade, shown in Figure 4.4, where the sultan's throne used to be placed for special occasions' ceremonies. The courtyard also includes a school for the palace residents, the residence of the high ranked servants "Ağalar", and the Sultan meeting room, which is located in front of Bab Al Saade and used for meetings with high empire's officials and foreign politicians. Furthermore, this courtyard also includes the Fatih pavilion, collection room for the Sultan's collectables, Servants' mosque, Ahmed III library, and the palace guards' residences.

4. Fourth courtyard: This courtyard was considered the private garden of the Sultan. However, the different sultans have built different structures in it, including the Sunnet room by Sultan Ibrahim, and Sofa pavilion by Sultan Mehmet IV containing unique Turkish architecture.
5. The Harem: the residence of the female servants of the Sultan consisting of a wood structure and 400 rooms. The area is also considered the private residence of the Sultan and his family, in addition to the private hospital.

The architectural interest in the Topkapi palace starts from the end of the second courtyard towards Bab Al Saade, specially the private areas of the Sultan in the third courtyard and the Harem. The architectural style of the palace is a mix of several cultures and origins depending on the separate buildings within it. Therefore, Islamic, Turkish, Persian, European styles are all present within the palace. The overall impression of the palace as described in sources as an illustration of paradise, especially in its gardens and private courtyards (Saoud, 2004).

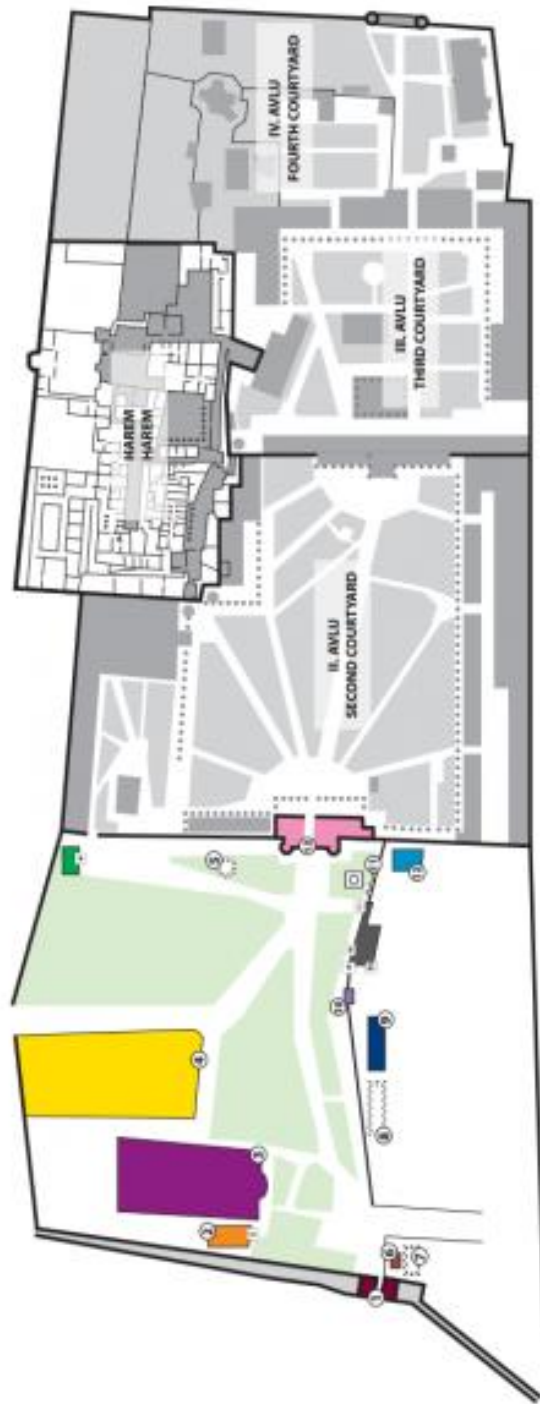


Figure 4.1: Overall plan of the Topkapı palace in Istanbul (Buvvo, 2016)



Figure 4.2: The entrance to the Topkapı palace and the first courtyard (Seles, 2004)

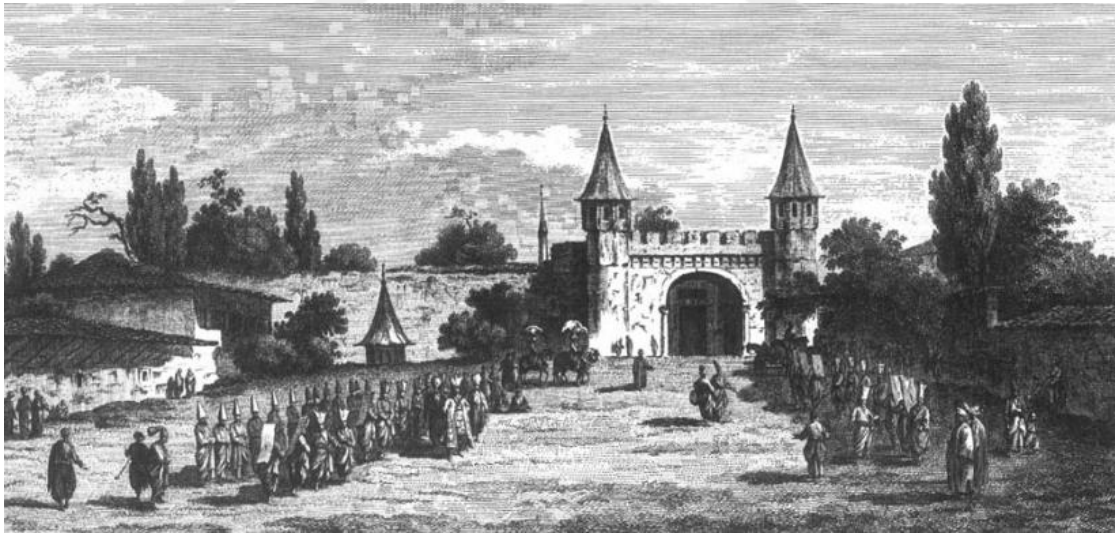


Figure 4.3: The gate to the second courtyard (Bab Al Salem) illustrated from the first courtyard (Seles, 2004)

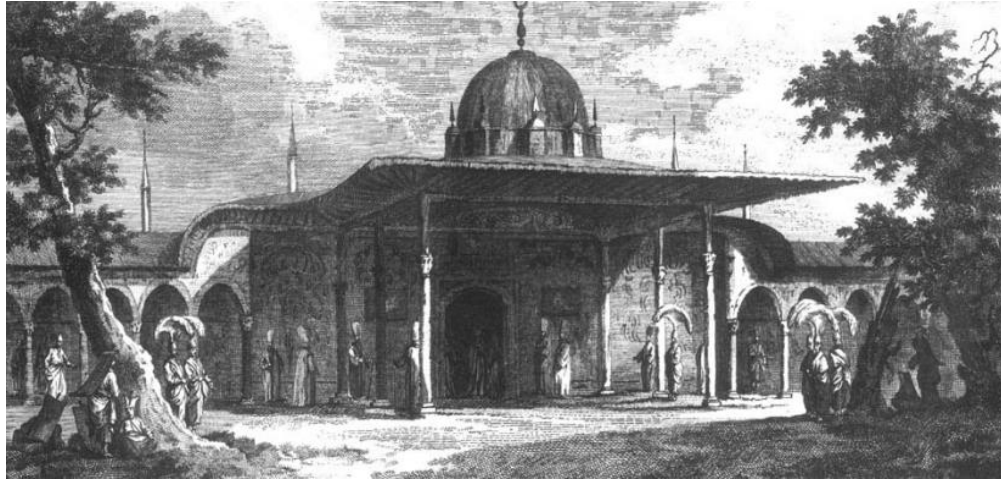


Figure 4.4: The gate of the third courtyard (Bab Al Saade) illustrated from the second courtyard (Seles, 2004)

4.2 Ottoman Palaces in Palestine

Three palaces have been chosen from Ottoman-Palestine in order to compensate for the magnitude of the Topkapi palace, which are:

1. Nemr Palace
2. Toukan Palace
3. Abdelhadi Palace

4.2.1 Nemr Palace

This palace is considered one of the first Ottoman palaces in Palestine as it was built by Abdulla Pasha Alnemr, a government member in the Ottoman empire and the grandfather of Sultan Ahmed I, who was sent by the Ottoman Sultan to ensure the control over Palestine. A view to the palace is provided in Figure 4.5. The construction of the palace took place in the 16th century, when the Ottomans took over the land from the Mamelukes, making it the eldest Ottoman Palace in the city (Emaduddin, 2017). The palace is located in the North East of Nablus old city as shown in Figure 4.6.



Figure 4.5: Nemr Palace in Nablus, Palestine (Khdeir, 2015)

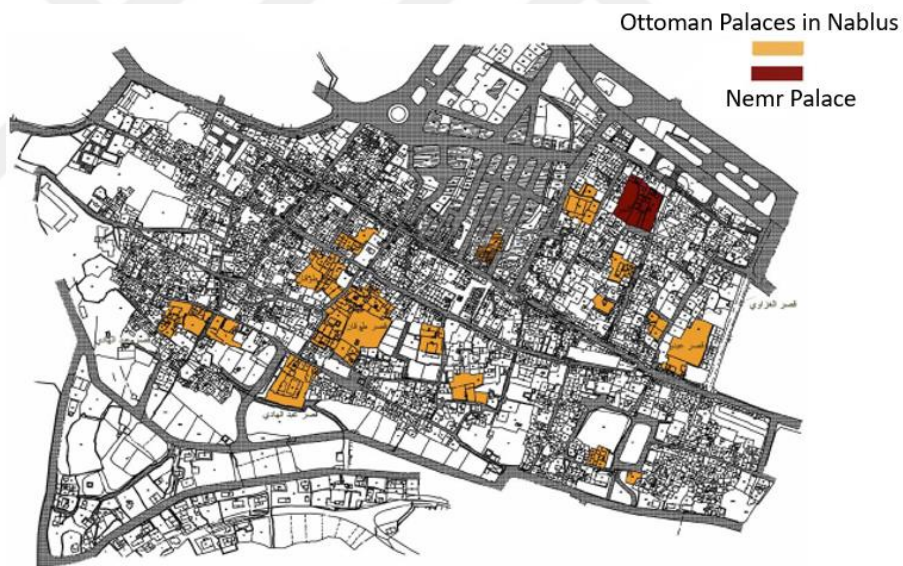


Figure 4.6: Location of Nemr Palace in Nablus old city (Kanaan, 2010)

Despite not having a well-documented full plan of the palace, several sources provided a description of the structure. The palace is divided into two main sections; Northern section, called the summer palace, and Southern section called the main palace. The architecture of the palace is based on the Ottoman style and its internal divisions dedicates a section for the women of the palace called “Haremlik”. The structure and the interior of

the palace have been severely affected by the attacks of the Israeli army (Kanaan, 2010). Figures 4.7, 4.8 and 4.9 provide floor plans and sections of Nemr palace.



Figure 4.7: First floor plan of Nemr Palace (Kanaan, 2010)



Figure 4.8: Second floor plan of Nemr Palace (Kanaan, 2010)

Legend: 1-Main entrance; 2-courtyard; 3-Haremlik (Women section); 4-Private rooms; 5-Hammam; 6-Prayer room; 7-Kitchen; 8-Servant rooms; 9-Stable; 10-Storage areas; 11-Meeting rooms (Selamlik); 12-Guest rooms

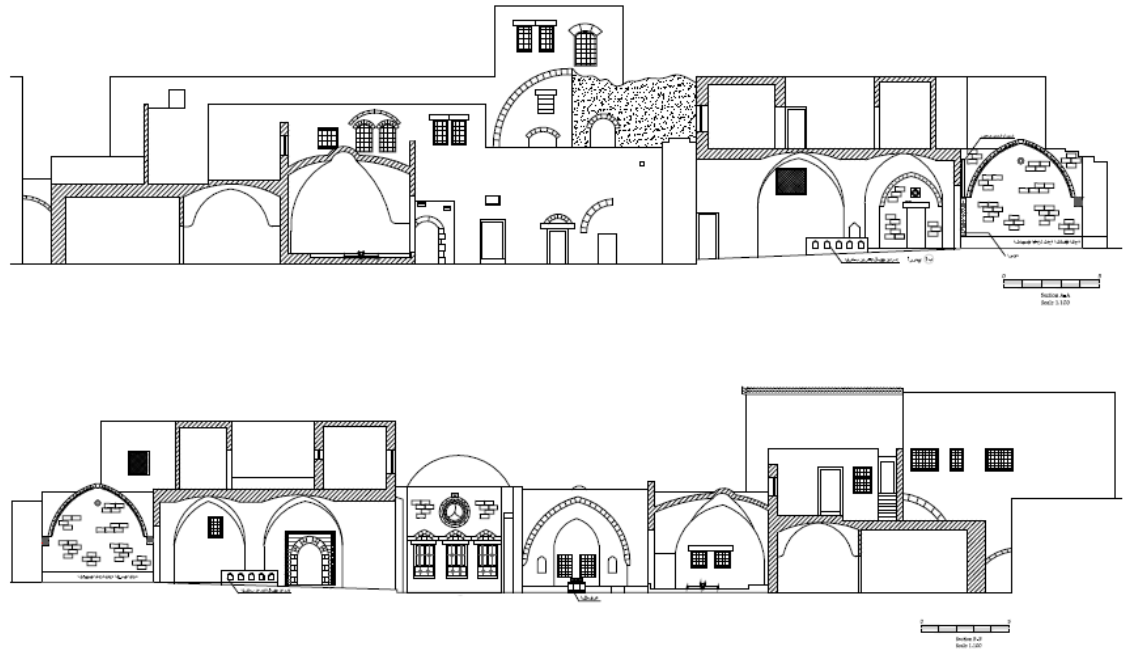


Figure 4.9: Sections of Nemr Palace (Kanaan, 2010)

4.2.2 Toukan Palace

This palace is located in the old city of Nablus and consists of hundred rooms distributed on two wings; south and north, and two floors, making it the biggest palace in the city. The palace was inhabited by one of the cities prestigious families, which it is named after (Daher, 2015). The Toukan family originate from Syria and moved to the city in the 17th century. The family members were known to be famous poets, politicians and fighters. Therefore, in the 18th century, they led the city of Nablus under the Ottoman rule and they committed to paying the taxation to the Ottoman ruler in the Levant region “Wali”. However, the Toukan family have resisted the Mamluk occupation to Palestine in 1831 under the rule of Mohamed Ali Pasha, beside the other ruling families in Palestine, until the lands were retrieved back to the ottomans. The Toukan family kept ruling Nablus until 1848, when the city rule was transferred to Abdelhadi family (Kanaan, 2010).

Furthermore, Toukan Palace is considered one of the most important palaces in Palestine, as it signifies the power of the Palestinian families under the Ottoman rule. The total dimensions of the palace are 40 meters width and 60 meters length, and it is located in the middle of the old city of Nablus as shown in Figure 4.10. The palace was built during the 17th century as the family took control over the political and economic aspects of the Nablus region, which extended to big parts of Palestine due to its influence and importance. However, due to the continuous ignorance by the Israeli occupiers and the military operations that were carried out by their army on the old city, big parts of the palace have been demolished (Kanaan, 2010). Figure 4.11 provides a floor plan for first-floor of the Toukan Palace, while Figure 4.12 illustrates the second-floor plan, as provided by Palestinian sources.

The architecture and interior of Toukan palace is based on Syrian style, specifically from Aleppo, where the family is originally from (Jaradat, 2012). The ornamentation in Toukan palace are based on the same concept of the whole structure. Moreover, local material from the city was used to build palace, using Syrian and Ottoman designs including arches, fountains and domes (Daher, 2015). A picture of the palace's main courtyard is shown in Figure 4.13.

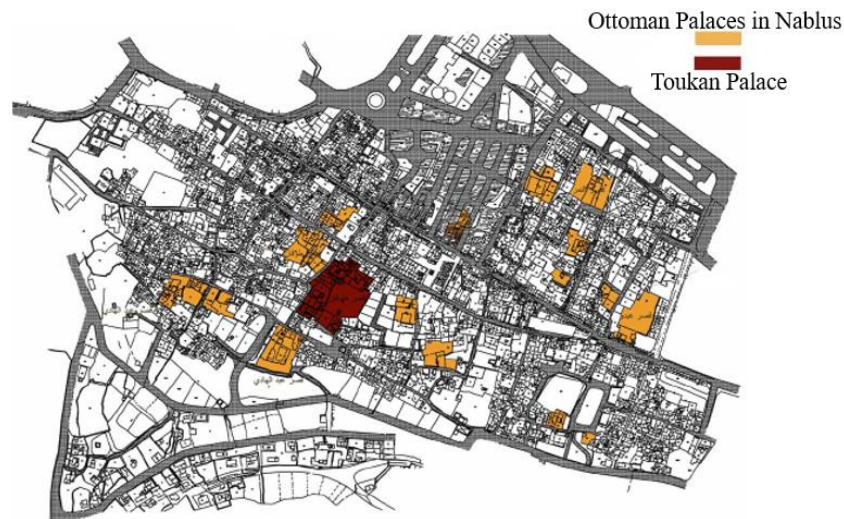


Figure 4.10: Location of Toukan Palace in Nablus old city (Kanaan, 2010)



Figure 4.11: First floor plan of Toukan Palace (Jaradat, 2012)



Figure 4.12: Second floor plan of Toukan Palace (Jaradat, 2012)

Legend: 1-Main entrance; 2-courtyard; 3-Haremlik (Women section); 4-Private rooms; 5-Hammam; 6-Prayer room; 7-Kitchen; 8-Servant rooms; 9-Stable; 10-Storage areas; 11-Meeting rooms (Selamlik); 12-Guest rooms



Figure 4.13: The main courtyard of Toukan Palace in Nablus, Palestine (Daher, 2015)

4.2.3 Abdelhadi Palace

The Abdelhadi family is considered one of the biggest Palestinian families in terms of power and wealth. The origins of the family extend to an Arabic tribe that settled in the East of the Jordanian river, known as “Alzebn”. In the 17th century, the family moved from their origin Palestine and became highly influential, controlling big parts of land under the Ottoman rule. Expanding their powers to all the important cities in Palestine, the Abdelhabi family presented themselves as strong competitors to the rules of Nablus at that time, Al Nemr and Al Toukan. Therefore, they succeeded in controlling the majority of Palestine including Nablus, where they stayed as one of the prestigious families of the city. The main issue that caused instability for the Abdelhadi family was their alliance with the Egyptian rulers and their political issues with the Ottoman rulers in Palestine Suleiman Pasha and after him his son Ibrahim Pasha (Kanaan, 2010; Asdaa, 2014).

Due to the families extended influence, their palace in Nablus was one of many palaces the family owned throughout Palestine. Another Abdelhadi palace, that was famous for its unique design, is their palace in Arraba, currently part of the city of Nablus (Mokadi, 2008). However, the Abdelhadi palace in Nablus old city, location in Figure 4.14, was built in 1820, partially damaged during the 1927 earthquake and renovated after. Figure 4.15 shows a distance view of Abdelhadi palace taken in 1860. The palace consists of 147 rooms and was built to a mixture of the Egyptian, Ottoman and Islamic architecture (Mahmoud, 2015).

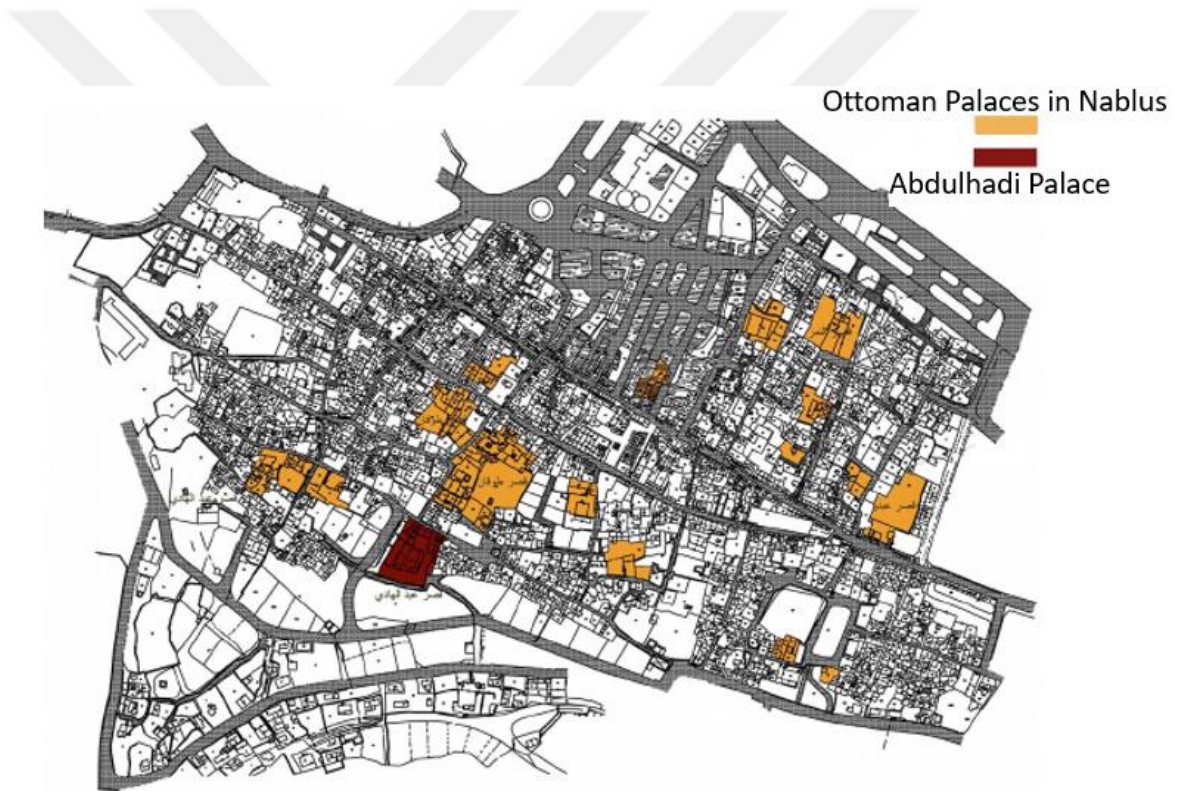


Figure 4.14: Location of Abdelhadi Palace in Nablus old city (Kanaan, 2010)



Figure 4.15: A view of Abdelhadi palace in Nablus old city taken in 1860 (Kababji, 2014)

Due to the lack of proper documentation and the continuous attacks carried out by the Israeli army, who does not care about the Palestinian heritage and works on destroying it as the chance allows (Mahmoud, 2015), it was difficult to find well documented plans and sections, except from a local researcher from the city, who her efforts in documenting the Palestinian heritage are well appreciated. Figures 4.16 and 4.17 show floor plans of the first and second floors of Abdelhadi palace, respectively.

As a comparison between the architectural elements of the palaces in Turkey and Palestine, Table 4 compares the palaces in terms of size and privacy layout. It is apparent that all palaces adopted a privacy strategy in them. However, the differences in sizes between the Turkish and Palestinian palaces is clear through the numbers comparison. Moreover, Table 5 provides a description of the interior elements of the four palaces including ceilings, walls, arches, columns, floorings, doors and windows.

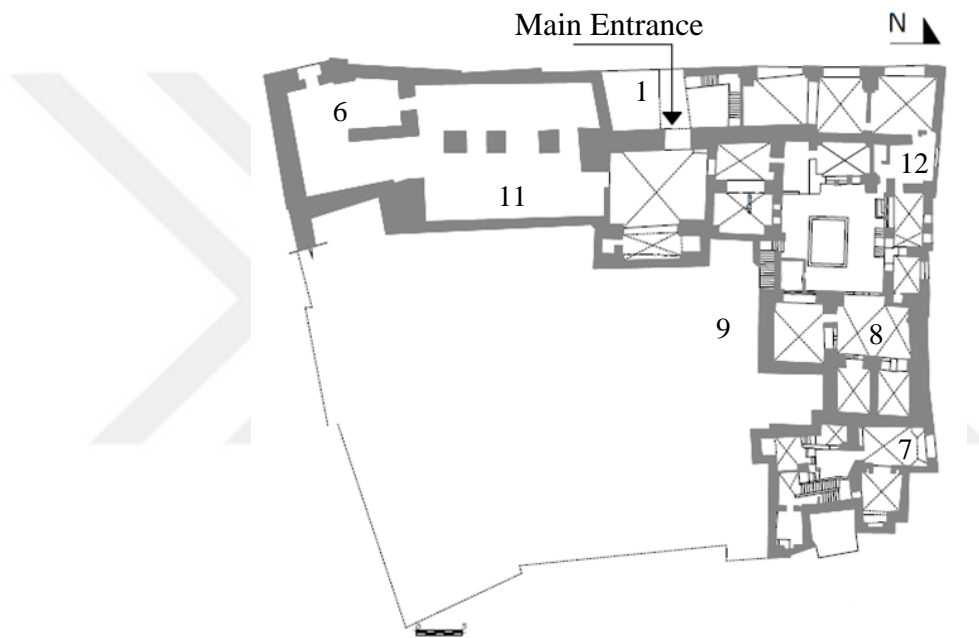


Figure 4.16: First floor plan of Abdelhadi Palace in Nablus old city (Kanaan, 2010)

Legend: 1-Main entrance; 6-Prayer room; 7-Kitchen; 8-Servant rooms; 9-Stable; 11-Meeting rooms (Selamlik); 12-Guest rooms



Figure 4.17: Second floor plan of Abdelhadi Palace in Nablus old city (Kanaan, 2010)

Legend: 2-courtyard; 3-Haremlik (Women section); 4-Private rooms; 5-Hammam; 7-Kitchen; 10-Storage areas

Table 4: Comparison between the palaces in the case Study (developed based on a survey by researcher)

	Nemr Palace	Toukan Palace	Abdelhadi Palace	Topkapi Palace
Number of Gates as main entry	1	1	1	1
Number of Main gates	1	1	1	3
Number of courtyards	2	3	2	4
Sequential privacy layout of courtyards	Parts close from the main gate are for the public visitors, then selamlik placed after on the first floor, then the haremlik is at the back of the palace on the second floor	First courtyard leads to guests and public areas, corridors leading to the internal courtyard for the Selamlik, and the top floor is mostly for private Haremlik rooms.	The front first floor is for public then proceeded by the Selamlik at the back. The top floor contains a courtyard that include the private Haremlik rooms.	First courtyard for public, stables and other military facilities. Second courtyard contains the governmental facilities and kitchens. Third courtyard is Selamlik. Harem is a private area to the West of the third courtyard, which is only accessed by the authorized people.
Number of Haremlik rooms	26	44	62	124
Number Selamlik rooms	18	31	43	86
Number of Majlis to accept foreigners	1	1	1	2
Number of Gardens	2	3	2	7

Table 5: Interior Elements comparison between the palaces in the case study. Developed by the researcher and through interior information provided in (Kanaan, 2010) for the Palestinian palaces

Interior Elements	Topkapi Palace	Alnemr Palace	Abdelhadi Palace	Toukan Palace
Ceilings	High domes with iznik ornamentations	Arches and domes without ornamentations	Domes with iznik central pieces	Domes from white sand with a center piece
Walls	Marble and iznik walls for interior. Stone walls for exterior	Sand Stone walls with continuous ornamentations	Gypsum and wooden wall coverings with big ornamentation patterns	Stone walls with minimal ornamentations
Lintels and arches	Stone arches with metal pieces reading poetry or famous verses	Stone arches consisting of a main arch and secondary arches, gaps filled with stone patterns	Plain stone arches with metal work fillings	Main stone arches with rich metal work fillings consisting of many ornaments
Columns and floors	Marble columns with dark body and white and gold heads. Marble flooring with ornamentations	Stone columns and ceramic floors	Ceramic and iznik tiling with colored ornamentations	Stone columns and ceramic tiling with patterns
Doors	Metal plain gates	Plain metal doors with stone frames	Plain doors with minimal ornamentations	Metal doors with patterned ornamentations
Windows	Colored glass with ornamentations patterns for protection	Metal windows frames with simple square metal protection	Wooden frames with plain glass. Square metal protection	Colored glass supported with metal frames

4.3 Factors Affecting the Ornamentation Style

There are several factors that influence the ornamentation style, class or type, including:

1. The nature of the place of which the structure is constructed in.
2. The political system of the country
3. Culture and religion
4. Social status of the ornamentation owner
5. The geographic location of the structure

In the Turkish case study, the Topkapı palace was constructed in İstanbul, which has an Eastern European nature. Moreover, when the palace was constructed and developed, the political system of the country was monarchy. The cultural background of the Ottoman empire is primarily Turkish. Nevertheless, many other cultures have influenced the Ottoman culture including European countries like Italy and Arabic culture, which influenced the religion of the empire. The culture of the empire was also influenced by the Persian culture, as well as Roman and Byzantine remaining in the Anatolia region.

The social status of the Topkapı palace inhabitants was also an influential factor, as Ottomans were considered the richest family in the empire. Finally, the geographic location of the palace is on the main hill in Istanbul, near to many Byzantine remaining.

Furthermore, Ottoman-Palestine had also its complex background. The nature of Palestine is Mediterranean. However, the land has an interesting extent with mountainous green north and deserted south. Politically, the country had instable political system, even during the Ottoman rule. While the Ottomans ruled strongly in the first 300 years, trials for control were made from Mohamed Ali Pasha in Egypt, as well as civil conflicts.

The culture and religion of Ottoman Palestine is mainly Arab and Muslim. Although the land had been under continuous conflicts for religious purposes and many people migrated during these instabilities, the land's nature was relatively stable during the Ottoman rule. Moreover, the families that built and lived in the Ottoman-Palestinian palaces, specifically

in the case study palaces, were of different origins. Nonetheless, these families did not only own wealth, but also control over most of the Palestinian lands. While Al Nemr family had their Turkish origins, Al Toukan migrated from Aleppo Syria and Al Abdelhadi are originally from East Jordan.

The several factors that influence the ornamentation class, style and type in both study targets resulted into diversity of ornamentation outputs. Moreover, the locations of the ornamentations within the palace and their owner play a major role in determining the final output. Therefore, the ornamentation content will be reviewed in detail during the analysis process.

4.2 Research Methodology

4.2.1 Analysis Objectives and Sample Selection

The main aim of the research is previously defined as to analyze the architectural ornaments in the Ottoman palaces in Palestine and Turkey by reflecting the input factors, political, environmental, cultural and social, and the output elements, ornamentations, and perform an architectural comparison to document similarities and differences. Thus, the objectives of the analysis are the following:

1. Apply the ornamentation analysis process on the case studies separately and collectively in order to define the elements that are dominant in each one of them.
2. Extract output elements from the analysis process to define the style, class and type of each element.
3. Analyze the ornamentations in the study target based on their natural and influential backgrounds, including culture, social status and geographic location, as well as the geometric and affiliation factors.
4. Establish comparison criteria between the ornamentations in each case study based on the analysis criteria used on the individual ornamentation analysis.

5. Compare the ornamentations in both case studies in order to derive the similarities and differences.
6. Provide recommendations for both case studies in a way that increases the ties between the two cultures and empowers the preservation of the ornamentations and structures.

The researcher has performed a field survey for the Turkish case study by visiting the Topkapı Palace and taking pictures of the different ornaments from the different parts of the palace. However, due to accessibility issues to the Palestinian palaces, the researcher depends on the documented ornaments provided by Palestinian resources. Furthermore, in order to perform a representing analysis, the ornamentations are selected based on the following criteria:

1. The representation of the style, class and type of the ornamentation to the overall content of the case study.
2. The variety of elements that are provided in the ornament samples.
3. The representation of the ornament of the cultures and social status of the palace inhabitants.
4. The unique ornaments that are only found in the case studies, rather than other structures in the adjacent areas.
5. Ornamentations with purpose, meanings and symbolism.

4.2.2 Analysis Structure, Comparison Criteria and Expected Outcomes

The structure of the analysis is similar the conventional method of ornamentation analysis. In the individual case study analysis, the ornamentation location within the case study is defined. Thereafter, the case is identified in terms of material and method of making, as well as its current status. Furthermore, the ornamentation elements are defined individually in terms of style, class and type, in addition a collective analysis of the whole

piece. Relations between the different pieces and the time period of which it was made are defined depending on the information available.

Moreover, the natural, cultural, social and political backgrounds of the ornamentation pieces are analyzed and defined according to the historic information related. Following the completion of the individual analysis, a comparison, which is based on the same criteria as the individual analysis, is performed in order to define the similarities and difference in style, class and type in conjunction with the natural, cultural, social and political backgrounds of each case study.

While both lands are of a strategic importance, the affiliations of other cultures and eras are expected to have a high impact on the way the ornamentations are designed. Moreover, the nature of both countries is different in terms of geography and topography, which is also expected to have an effect on the class of the studied pieces. The difference in culture and social status play major role in determining the class and types of the ornamentation, which is another source of contrast. Nevertheless, the same factors may yield similarities as the affiliating cultures are close to each other, as well as the nature of the case studies lying in the Mediterranean region and having the Islamic background.

4.3 Analysis of the Palestinian-Ottoman Ornaments

In the Palestinian-Ottoman palaces located in Nablus old city, Palestine, there are a variety of ornamentations that were presented through Kanaan (2010). Therefore, eleven ornamentations are selected from the Palestinian case study to represent a certain variety for analysis. Moreover, the reviewed ornamentations are analyzed geometrically, culturally and according to their affiliations. Table 6 shows the selected ornamentation from the Palestinian-Ottoman case studies and their analysis.

Table 6: Analysis for Palestinian-Ottoman ornamentations – Developed by the researcher from Kanaan (2010)

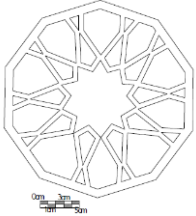
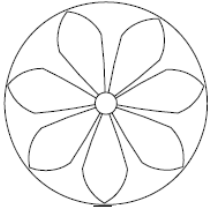
Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Al Nemr Palace</p> <p>Center of gate lintel</p> <p>Engraved in sand stone</p>	<p>Style: Islamic and a simple form of Moorsque ornamentations</p> <p>Class: Geometrical ornamentation</p> <p>Type: 10-point star with 72° angles</p>	<p>Beautifying ornamentation symbolizing the influence of the Islamic art and culture into architecture</p>
	<p>Al Nemr Palace</p> <p>A continuous pattern on the Western wall</p> <p>Engraved in sand stone</p>	<p>Style: Egyptian ornamentation</p> <p>Class: Floral formation</p> <p>Type: 7-petal flower</p>	<p>A continuous band of floral ornamentations that are continuous as a band on the western wall. Originating from the Egyptian ornamentations reflects the tie between the civilization in Palestine and Egypt. The natural form is for the chrysanthemum flower.</p>

Table 6: Analysis for Palestinian-Ottoman ornamentalations – Developed by the researcher from Kanaan (2010)

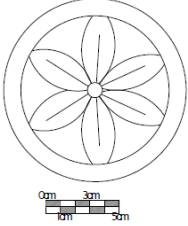
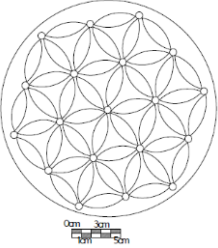
Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Toukan Palace</p> <p>Internal door ornamentation</p> <p>Formed in metal at the face of the door</p>	<p>Style: Developed Egyptian ornamentation</p> <p>Class: Floral formation</p> <p>Type: 6-petal flower in a compact setting contained by a double circle</p>	<p>Centered on the door leaf as a reflection to the connection with beautiful nature and a symbol of the imitation of the Egyptian ornamentalations. The natural form is for the Jasmine flower.</p>
	<p>Abdelhadi Palace</p> <p>Center of door lintel</p> <p>Metal form</p>	<p>Style: Developed Egyptian Ornamentation</p> <p>Class: Symmetrical and delusional floral formation</p> <p>Type: 6-petal flowers sharing petals and half flowers on the circumference</p>	<p>The ornamentation is developed from the Egyptian floral formations with the delusional effect reflecting the magical impact of the natural forms. Full seven flower stigmas sharing petals with each other and other nine half flower formations. The natural form is for the lily flower.</p>

Table 6: Analysis for Palestinian-Ottoman ornamentations – Developed by the researcher from Kanaan (2010)


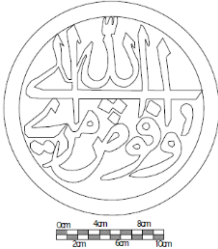
Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Abdelhadi Palace Center of the inner dome surface</p> <p>Metal formation fixed to the dome structure</p>	<p>Style: Islamic geometrical with floral elements from Egyptian ornamentation</p> <p>Class: 3-level geometric shapes with 16 angles containing natural forms</p> <p>Type: developed ornamentations gathering the geometric forms around that uses the ottoman symbol with the crescent and the 8-petal flower form substituting the star</p>	<p>This ornamentation shows the influence of the ottoman era on the ornamentation by using the ottoman symbol with a substituted Egyptian floral form instead of the star, which reflects the influence of the Egyptian and the Ottoman cultures and the ties of the Islamic geometry and natural formations.</p>
	<p>Abdelhadi Palace Center of internal window lintel</p> <p>Casted in with mud</p>	<p>Style: Islamic and Arabic writings</p> <p>Class: Quran verse written in Ruqa font centered in double circular frames</p> <p>Type: compact Quran writing</p>	<p>Symbolizing the connection with the Islamic culture and leaving matters to God when no control can be taken, accepting the fate written by God. The circular form symbolizes the strength of God</p>

Table 6: Analysis for Palestinian-Ottoman ornamentations – Developed by the researcher from Kanaan (2010)



Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Abdelhadi Palace</p> <p>Internal dome ornamentation</p> <p>Casted formation with painted internal accents</p>	<p>Style: Developed Egyptian ornamentation using Ottoman colors</p> <p>Class: Casted geometric formation at the internal surface with floral formation at the center</p> <p>Type: Circular frames containing 5-point star containing a floral form with 3 petals and 3 leaves</p>	<p>Symbolizing natural forms including the sky with the blue color, and the nature with the developed Egyptian floral form</p>
	<p>Abdelhadi Palace</p> <p>Room Floor</p> <p>Iznik tiles</p>	<p>Style: Continuous geometric and floral forms from Ottoman and Egyptian styles</p> <p>Class: forms in iznik tiles using Palestinian influenced colors, red, yellow and green</p> <p>Type: double 4-petals countered in geometric forms and framed with yellow lines</p>	<p>The use of material symbolizes the connection with the Ottoman empire, while the forms symbolize the influence of the Egyptian floral style with the use of the red color of the Palestinian earth and the green floral of vegetations</p>

Table 6: Analysis for Palestinian-Ottoman ornamentalations – Developed by the researcher from Kanaan (2010)

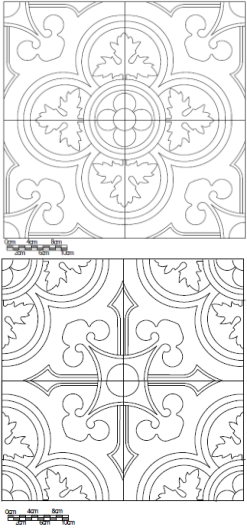
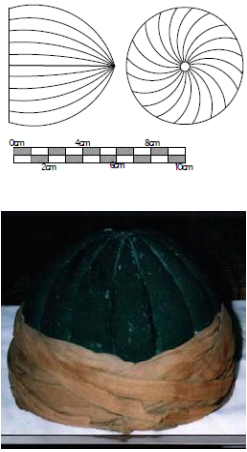
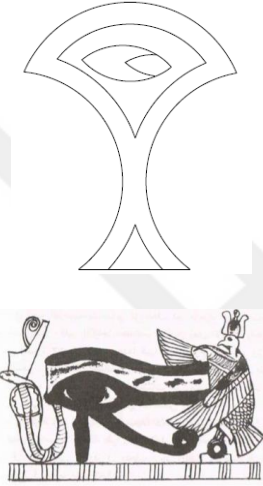
Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Abdelhadi Palace Room Floor Center Iznik Tiles</p>	<p>Style: Developed Palestinian Ornamentation from Ottoman and Egyptian forms</p> <p>Class: Geometric natural forms</p> <p>Type: Three natural forms with 4-petal floral type from the Egyptian ornamentalations, surrounded by grape leaves formations in 3-lined frames and palmate and hastate leaves developed through the Islamic ornamentalations and used in the Ottoman architecture</p>	<p>This ornamentation contains natural elements symbolizing three cultures, Egyptian, Palestinian and Ottoman by using the geometry of the natural forms and the iznik tiles. The second picture shows the continuation of the form with spear heads in the middle of the palmate leaves.</p>
	<p>Toukan Palace (A typical ornamentation used in Palestinian-Ottoman palaces)</p> <p>Doors and Window lintels</p> <p>Engraved and Cased in Sand stone</p>	<p>Style: Islamic ornamentation</p> <p>Class: Geometrical waved lines</p> <p>Type: Dome with waved lines</p>	<p>Symbolizing the head wear of the Islamic scholars and the Islamic rulers giving the meaning of the ruling families of the country with a religious nature</p>

Table 6: Analysis for Palestinian-Ottoman ornamentations – Developed by the researcher from Kanaan (2010)

Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Al Nemr Palace Walls Engraved in Sand Stone</p>	<p>Style: Developed from Egyptian ornamentation Class: Human part framed with curved lines Type: an eye symbol framed with curved forms</p>	<p>Symbolizing the protection from the envy by using the eye form (used in Egyptian ornamentations for protection from sickness and envy, shown in the picture below) and the curved frame symbolizing the natural form of the lotus flower from Islamic ornamentation</p>

4.3.1 Geometry

The geometry of the Palestinian-Ottoman ornamentations is well kept through all ornamentations of all types. However, variety of forms, shapes and symbols are used to reflect several meanings, which are discussed earlier and through the following sections. Several geometric shapes are used through Islamic ornamentations, which are mainly focused on top of doors and window lintels. Moreover, star formations with several dimensions with 4-point to 16-point stars with different angels.

The natural forms illustrate the geometry of the ornamentations, where floral and leaves' ornamentations are distributed to the sides of the patterns and even in the depth of the

pieces. The geometry of natural form often lacks the symmetry due to imitation and symbolism of flowers from the Palestinian nature.

4.3.2 Culture

The Palestinian local culture is apparent in the ornamentations through the use of the red and green colors and local natural material such as sand stone. Nevertheless, the Ottoman culture influences the ornamentation through the use of the blue color in few pieces, mainly in the ceiling and the crescent and the star formation. Furthermore, the main culture that rules the ornamentations in the Palestinian-Ottoman palaces is the Islamic and Arabic culture, which is noticed through the Moresque forms and geometrical pieces spread around the case studies.

The Palestinian development of the geometric and natural forms, and the mixture between both classes shows a level of innovation, while using local natural forms such as the Jasmine flower and the grape leaves symbols.

4.3.3 Affiliation

Through the analysis of the ornamentations of the Palestinian-Ottoman palaces, it can be suggested that the pieces and the art forms are influenced by four main factors:

1. The local Palestinian culture and nature, by using local Palestinian natural forms and colors.
2. The Islamic Moresque ornamentations, by using the geometric shapes and stars on several pieces and mixing them with natural forms. Moreover, the use of the ruler's head cover as a symbol of control and ruling through religion.
3. The Ottoman rule, by using color that symbols the sky and paradise.

4. The Egyptian natural and cultural formations, such as the floral forms and the eye symbols.

Therefore, the Palestinian-Ottoman ornamentations are a mixture of the history of the land and the influence of the political control.

4.4 Analysis of the Turkish-Ottoman Ornaments

In the Turkish-Ottoman Topkapı palace located in Istanbul, Turkey, there are a variety of ornamentations that are collected through a field survey performed by the researcher. Thus, twelve ornamentations are selected from the Turkish case study to represent a certain variety for analysis. Moreover, the reviewed ornamentations are analyzed geometrically, culturally and according to their affiliations. Table 7 shows the selected ornamentation from the Turkish-Ottoman case study and their analysis. Furthermore, due to the limitation of the space, full size illustrations of the analyzed ornamentations are provided in Appendix A.

Table 7: Analysis for Turkish-Ottoman ornamentations – Developed by the researcher through field survey


Picture of Ornamentation	Location	Analysis (Style, Class & Type)	Symbolism and meaning
	<p>Topkapi Palace First court</p> <p>Door lintel</p> <p>Metal plate installed on stone support</p>	<p>Style: Islamic Calligraphy</p> <p>Class: literature and poetry</p> <p>Type: poetry lines</p>	<p>Poetry line symbolizing the greatness of the ruler</p>

Table 7: Analysis for Turkish-Ottoman ornamentations – Developed by the researcher through field survey



Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Topkapi Palace Second Court</p> <p>Fountain top</p> <p>Stone engraved and painted</p>	<p>Style: Ottoman ornamentation</p> <p>Class: Natural forms and symbols</p> <p>Type: Sultan crown surrounded by palmate leaves in a continuous pattern using green and gold colors</p>	<p>Symbolizing the greatness of the Sultan with the golden head wear and natural forms with Palmate and hastate leaves in Gold with natural stone and green painting</p>
	<p>Topkapi Palace Bab Al Humayun</p> <p>Gate Lintel</p> <p>Metal forms on marble support</p>	<p>Style: Islamic Calligraphy</p> <p>Class: Symbols and logos</p> <p>Type: the Islamic “Tawheed” statement and the signature of the Sultan</p>	<p>As the public entrance of the public, the top statement reads “there is no God but Allah, Mohamed is the messenger of Allah” in Gold calligraphy with a green background. The same is applied to the Sultan’s signature in reflection of the majesty of the place and the social status</p>

Table 7: Analysis for Turkish-Ottoman ornamentations – Developed by the researcher through field survey



Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Topkapi Palace Sultan Meeting room</p> <p>Column Head</p> <p>Marble engraving with Golden and marble accents</p>	<p>Style: Byzantine ornamentation</p> <p>Class: Column head engraving</p> <p>Type: Natural and geometric forms</p>	<p>The natural form engraved on the column head symbolize the tulip flower from the Turkish nature. Black marble and golden metal accent are added to reflect the majesty of the place and the Sultan.</p>
	<p>Topkapi Palace Third court</p> <p>Wall</p> <p>Iznik painting</p>	<p>Style: Persian ornamentation with Ottoman development</p> <p>Class: Natural and symmetric forms</p> <p>Type: Natural continuous forms on the frame with symmetric natural content</p>	<p>The natural forms symbolize several natural elements such as the palmate, hastate, tulips and other natural forms. The colors are mainly blue with different degrees, green, yellow and white.</p>

Table 7: Analysis for Turkish-Ottoman ornamentations – Developed by the researcher through field survey



Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Topkapi Palace Sultan Ahmed I library fountain</p> <p>Fountain decoration</p> <p>Marble engraving and painting</p>	<p>Style: Islamic and Ottoman ornamentations</p> <p>Class: natural forms, symbols and calligraphy</p> <p>Type: continuous symmetric natural forms with poetry at the bottom, headed by the symbol for a natural form</p>	<p>The continuous natural forms symbolize elongated bi-lobed leaves and few palmate leaves. The calligraphy written in Gold is a poetry asking God for reward for the good deed. The Top is a beautifying crown. The colors used in the piece are blue, red and Gold.</p>
	<p>Topkapi Palace Divan</p> <p>Window protection</p> <p>Metal forms installed in front of the glass window</p>	<p>Style: Islamic ornamentation</p> <p>Class: Natural forms</p> <p>Type: vegetation leaves and petals</p>	<p>Alternating pattern symbolizing different natural forms in Golden metal work</p>

Table 7: Analysis for Turkish-Ottoman ornamentations – Developed by the researcher through field survey




Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Topkapi Palace Third court</p> <p>Wall</p> <p>Hexagon Iznik tiles</p>	<p>Style: Ottoman ornamentation</p> <p>Class: natural forms</p> <p>Type: floral formations</p>	<p>Continuous frames around floral center symbolizing the nature of with blue, red and white colors</p>
	<p>Topkapi Palace Throne room</p> <p>Wall top</p> <p>Stone engravings with painting</p>	<p>Style: Ottoman ornamentation</p> <p>Class: Natural forms</p> <p>Type: leaves and floral forms</p>	<p>Symbolizing paradise with elongated gold leaves and flower vases sided by vertical patterns for natural forms centered by the sunflower</p>

Table 7: Analysis for Turkish-Ottoman ornamentations – Developed by the researcher through field survey

Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Topkapi Palace Harem</p> <p>Wall</p> <p>Iznik tiles with paintings</p>	<p>Style: Ottoman ornamentation</p> <p>Class: Natural forms</p> <p>Type: Leaves and floral forms from a vase</p>	<p>Symbolizing paradise with tulip and hyacinth motifs using blue, red and green colors with a white background</p>
	<p>Topkapi Palace Shehzade room</p> <p>Wall decoration placement</p> <p>Iznik tiles</p>	<p>Style: Ottoman ornamentation</p> <p>Class: Natural forms</p> <p>Type: Vegetation leaves and floral forms</p>	<p>Symbolizing paradise through the hyacinth forms using the blue, red and green colors on a white background</p>

Table 7: Analysis for Turkish-Ottoman ornamentations – Developed by the researcher through field survey

Picture of Ornamentation	Location	Analysis (Style, Class &Type)	Symbolism and meaning
	<p>Topkapi Palace Harem</p> <p>Top wall decorations</p> <p>Stone engravings</p>	<p>Style: Islamic ornamentation</p> <p>Class: Natural forms</p> <p>Type: water drops</p>	<p>Due to the location and the form of the ornamentation, it can be suggested that this form symbolizes rain drops through the overall decoration theme that symbolizes paradise</p>

4.4.1 Geometry

Through the field survey performed by the researcher and the review of the ornamentation samples of the Turkish-Ottoman at the Topkapı palace, it can be suggested that geometry is kept symmetric throughout all the beautifying pieces. The natural forms curvature and orientations form pieces that mostly framed with natural forms' motifs and centered at the center of the piece. Nevertheless, for the gate and fountain ornamentations, several classes are merged together while keeping the eye-pleasant geometry as seen in the fountain at the Sultan Ahmed I library.

Using calligraphy to cite religious statements or poetry verses also maintains the geometry of the ornamentations without providing the symmetry that is maintained in natural forms.

However, the geometry mainly depends on the font used in the writing, which uses curvature to compensate for the different shapes of the letters. The colors play a major role in achieving symmetry in the ornamentations. The excessive use of the gold color in public and government space symbolize majesty, while the private areas symbolize the paradise theme. Furthermore, the majority of the pieces use square or hexagon shapes that reflects majesty and elegance.

4.4.2 Culture

It is proven through history that Ottomans depended on artists from Persia to build their structures and palaces at the beginning of their empire. However, Turkish artists were able to develop their own style by adding natural elements into the ornamentations. The Islamic and Turkish cultures, as well as European styles, were incorporated in many pieces in the Topkapi palace, which illustrate a mixed culture that is centered around the Turkish origins of the ruling family.

Furthermore, the colors and types of ornamentation reflect the social status of the structure inhabitants, who were known to be one of the richest monarch families of their time. Many attention was paid to showing the majesty of the ruling family and providing a certain picture to the public. However, through the different themes shown in the public and private areas of the palace, the Ottomans divided the areas of the palace into the majestic theme shown in the outer courts, Divan and throne room, and the paradise theme that is illustrated in the Harem and the private areas.

4.4.3 Affiliation

There are three main affiliations to the ornamentations in the Topkapi palace, which are as the following:

1. Islamic affiliation, shown through Islamic calligraphy and the geometric pieces that were reviewed in the previous chapters.

2. Persian affiliation, as the Ottomans used Persian artists and architects to build their structures and add the beautifying pieces.
3. Natural affiliation, through the natural forms provided by vegetation and the social status that influenced the detailed pieces.



CHAPTER 5

CONCLUSION

As a result of the study, the researcher provides a comparison between the two case studies, as well as the final conclusions of the case study along with recommendations to empower the study of ornamentations specifically for the present case studies and affiliated case studies of the same time period.

Through the execution of the case study, the researcher would like to provide the recommendations for both cases in order to empower the ornamentation preservation, research and analysis for future studies:

1. The Palestinian palaces requires further efforts by the Palestinian authorities in preservation of the ornamentation pieces and for the palaces in general. During the research, it was evident that the sites suffer from destruction by the events in the country and there were minimal efforts in preserving and restoring them.
2. Further documentation of the ornamentation is required for the Palestinian-Ottoman ornamentations. It was difficult to provide good samples for the study due to the lack of documentations.
3. Coordinate with the local authorities and researchers in order to ease access to the archeological sites in the Palestinian territories, which would serve in the previously requested efforts.

4. Specific and professional documentation is required for the Turkish-Ottoman ornamentations. The majority of the resources are focused on the description of the palaces, rather than the specific architectural elements including ornamentations.

By reviewing and analyzing the ornamentations in both case studies, there are several similarities, given that both were built during the same historic era. Nevertheless, both target cases have their own affiliations and styles that influenced the classes and types ornamentations, causing differences at all levels. Table 8 below provides a comparison between ornamentations in the case studies.

Table 8: Comparison between ornamentation in the case studies

Comparison Points		Comparison
Styles	Similarities	The ornamentations in both case studies utilize the Islamic style
	Differences	The Islamic style is more utilized in the Turkish case study through calligraphy. While the Palestinian palaces used Egyptian styles in reflecting natural forms, the Turkish palace have used Persian and Turkish styles with the existence of some Byzantine styles (Kanaan, 2010).
Classes	Similarities	Both case studies used natural forms from their surroundings.
	Differences	Calligraphy is more used in the Turkish palace.

Table 8: Comparison between ornamentation in the case studies

Comparison Points		Comparison
Types	Similarities	The usage of typical Islamic styles such as the geometric ornamentations, as well as symbols for palmate and hastate.
	Differences	Each case study used natural forms of their surroundings. While the Palestinian palaces used Jasmine and lilies, the Turkish palace used tulip and hyacinth (Abdullahi & Embi, 2015).
Colors	Similarities	The Palestinian palaces used the blue color occasionally to symbolize the sky as affiliated by the Turkish. However, the green color is the mutual used color between the two case studies to illustrate vegetation, with the Palestinian palaces representing natural forms in sand stone color
	Differences	Palestinian palaces used natural sand stone color, while using red to symbolize the earth color of the Palestinian land. The Turkish palace used the blue and green for the paradise theme and the Gold and green for the majestic theme.
Reflection of Social Status	Similarities	Both case studies reflect the social status of their inhabitants. The Palestinian palace were inhabited by ruling families of an Ottoman Sanjak, which their ornamentations were more sophisticated than normal houses of the public. The same can be concluded for the Topkapi palace, where the Ottomans showed their social status through the gold calligraphy at the gates and on the courts' walls.
	Differences	The social status of the Ottoman was higher than the rulers of Palestine. Therefore, the Topkapi palace had taken more resources by using the gold and marble on most of their ornamentations, while the Palestinian rulers used natural sand stone and metal (Kanaan, 2010).

Table 8: Comparison between ornamentation in the case studies

Comparison Points		Comparison
Affiliations	Similarities	Both case studies affiliated by other cultures, especially the Islamic culture.
	Differences	The Palestinian palaces are affiliated by Egyptian, Palestinian and Ottoman cultures, while the Turkish palace is affiliated by Persian and Byzantine cultures (Alramlawi, 2012).
Geometry	Similarities	Geometry is kept through the several ornamentations.
	Differences	Palestinian ornamentations adopt more circular shapes, while the Turkish depend on Square and hexagon shapes. Symmetry is stricter in the Turkish ornamentations, while the Palestinian focused on variety within the same piece (Abdullahi & Bin Embi, 2013).
Material	Similarities	Metal motifs and iznik
	Differences	Palestinian used sandstone, while Turkish used marble and Gold plating.

There is a symbolic meaning to ornamentations that reflects the culture and history of a certain civilization. The main aim of ornamentation is to beautify and add a unique appearance to structure for different purposes, which depend on the culture and the architectural intent. According to the reviewed literature, there are six elements that influence the architectural style and subsequently its ornamentations, including; the geographic, geologic, climatic, religious, political and historic influencers.

The Middle East region contained most of the ancient civilizations on earth, which developed their distinct architectural styles and paid different degrees of attention to beautifying elements such as the Egyptian, Greek, Roman, Byzantine, Arabic and Islamic, and Ottoman civilizations. By reviewing the previous studies of ornaments analysis, it is concluded that there are three main factors that shall be reviewed, which are style, class and type of the ornamentations. Other factors such as material, colors, geometry, culture and affiliations can also be studied to reinforce the findings. Furthermore, two case studies were selected from Palestine and Turkey in order to analyze and compare ornamentations during the Ottoman period.

The Palestinian case study showed styles that are influenced by the local Palestinian culture as well as styles that are adopted from Egyptian and Ottoman cultures, as shown in Table 6 of the analysis. Moreover, the Turkish styles are influenced by Persian and Byzantine cultures, as shown in Table 7 of the analysis. Nonetheless, both case studies utilized natural forms as the main class in the ornamentations. However, the Turkish-Ottoman case study reflected a higher social class and focus on calligraphy by using the gold color and green backgrounds and illustrating a paradise symbolism in the private palace areas.

Red and green colors were used in the Palestinian ornamentations to reflect the earth colors and nature of Palestine, which were used similarly in the Turkish counterpart. Nevertheless, the Turkish-Ottoman case study utilized more colors such as blue and white to reflect better ornamentation illustrations. In conclusion, the selected cases of this

research, which were built during the rule of the Ottoman empire had their similarities due to the time period. However, the differences were mainly affected by the culture, affiliating cultures, and the social status of the structure builders. Although many critics argue that ornamentations provide a distance between the architectural style and the public (Heathcote, 2015), the case study proves that ornamentations can form a connection between cultures and indicate more than just a beautifying style.



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APPENDIX A



Figure A1: Topkapi Palace - First court - Door lintel- Metal plate installed on stone support



Figure A2: Topkapi Palace - Second Court - Fountain top - Stone engraved and painted



Figure A3: Topkapi Palace - Bab Al Humayun - Gate Lintel- Metal forms on marble support



Figure A4: Topkapi Palace - Sultan Meeting room - Column Head - Marble engraving with Golden and marble accents



Figure A5: Topkapi Palace - Third court – Wall - Iznik painting



Figure A6: Topkapi Palace - Sultan Ahmed I library fountain - Fountain decoration - Marble engraving and painting



Figure A7: Topkapi Palace – Divan - Window protection - Metal forms installed in front of the glass window



Figure A8: Topkapi Palace - Third court – Wall - Hexagon Iznik tiles



Figure A9: Topkapi Palace - Throne room - Wall top - Stone engravings with painting



Figure A10: Topkapi Palace – Harem – Wall - Iznik tiles with paintings



Figure A11: Topkapi Palace - Shehzade room - Wall decoration placement - Iznik tiles



Figure A12: Topkapi Palace – Harem - Top wall decorations - Stone engravings