Decoding the Unknown Historic Urban Grammar of Antakya Through Property Rights

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Abstract
Purpose
This research proposes that the property rights in the title deeds records in an urban setting merit investigation to decode the unknown urban grammar of the order of historic Islamic-Ottoman urban forms which have consisted invisible links between the creation of urban form and its inhabitants.

Design/Methodology/Approach
This consideration of how an urban form is created and regulated according to property rights is a subject that has to date not been investigated like in this way by analyzing the archive materials and records in the title deeds and cadastral plans in a specific urban form. Accordingly, the hypothesis of this inquiry is focused on defining the relationships between property rights and urban form, which will help to reveal the hidden and intimate norms-regulations of the context. This will also help in the making of an objective analysis through information gathered from primary legal written and graphical sources –title deeds and cadastral plans– for a subjective issue. This research, therefore, suggest that the property rights and its urban grammar are

Keywords: Property rights, urban morphology, urban conservation, interpretation, Antakya

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not only one of the important factors in the formation of urban form, but important aspects in understanding the dialectic relations between formation and persistence of urban form and features.

Findings
The research findings can be grouped into two headings: literature review and case-study research. The literature review findings focusing on the analogy which is firstly used and defined in this research as a philosophical tool to explain the rules and rights related to property, and their role in managing the process of growth and shaping the urban form under the main tangible and intangible aspects. The case study research findings relying on Antakya historic urban form under the influence of property rights and presenting original analysis relied on original archive documents and site surveys. Accordingly, it concentrates on evaluations for decoding the unknown historic urban grammar of Antakya and presents original findings of the research.

Research Limitations/Implications
The research uses historical interpretive and case-study research methodologies in the limitations and implications of urban form and conservation studies.

Practical Implications
Increased knowledge on the influence of property rights and its order on formation of historic urban forms. The case-study part of this research demonstrated that the property rights an important aspect for considering how inhabitants created an urban form.

Social Implications
This research helps to understand the intimate values of urban forms by an objective and reliable analysis. It also helps to define social and/or moral values of historical urban form.

Originality/Value
This research firstly revealed the property rights that have major implications for understanding the formation and persistence of every single component of Antakya historic urban form. Therefore, it deserves greater consideration in urban studies such as urban morphology and conservation in order to make holistic assessments.

INTRODUCTION
Property rights within historical urban contexts, an important aspect when considering how inhabitants create an urban pattern from an urban context, being starting point of living, using, building, designing and forming the built environment. Property rights can refer not only to the physical forms, socio-cultural structures, administrative issues, political and economic conditions of the urban context, but also their way of defining an order between the context and its inhabitance, investigates the combination of tangible and intangible values and their continuity in an urban context, which has emerged as an important issue in historic urban form studies.

The main goal of urban form studies is to assess the values of a historic urban context in order to maintain or improve its character, and to guard it against harmful and destructive effects.
It is structured on an extremely strong theoretical methodology, which consists of a careful and systematic documentation of the context, and an analysis and evaluation of data related to socio-cultural, economical, administrative, historical, and physical aspects at various scales, all of which led to guide an appropriate decision-making process.

Despite considering socio-cultural aspects and values, the current dominant methodology is unable to assess intangible values through the depiction of user experiences within the contexts. For this reason, urban form investigations should aim to go beyond the previously dominant investigations to identify the values of plural interpretations and meanings between the physical context and its inhabitants. John Pendlebury (2009, p.12), referring to the erosion of value assessments, focused on the importance of different value assessment methodologies so as to come up with plural interpretations and meanings between the object and its environment; “There has been an erosion of the previously dominant notion of value understood as intrinsic to the object or environment and able to be revealed by correct processes of investigation that could only be conducted by a limited body of experts. In a pluralist democratic society, it is argued; definitions of value cannot be singular but must allow for plural interpretations and meaning”.

Yet, at an urban scale, investigating the combination of tangible and intangible values by understanding and identifying plural interpretations and meanings between the context and the users is a complex subject, and no widely accepted methodology has yet been developed (Rifaioğlu & Şahin Güçhan, 2013).

Accordingly, urban-scale conservation studies still face the question of what kind of investigations would help in understanding and identifying the values generated from human experiences within the physical context, or in other words, the spirit of place (Rifaioğlu, 2012).

In fact, there have been many theoretical and practical studies on this issue that may provide some answers for the field of urban studies. As a theoretical example, Karl Kropf (1993) defined the basic investigation principles in the built form derived from Johann Wolfgang von Goethe and applied by Gianfranco Caniggia and M.R.G. Conzen. According to Kropf (1993, 1996), the urban context should be investigated in terms of human choices, process of formation, arrangements of parts and an interpretation. Kropf (1993) defined the human choices as tangible attributes –stone, brick, timber, glass, tile, etc.– and how they are put to use by humans. He noted that (1993, p.10), “(The) built form is the material in an arrangement which is the result of human choice, the choice of using a particular material for a particular purpose and putting it in a particular place”. From an
urban conservation point of view, an assessment of human choices in the built form would allow a definition of the technical values of the context.

Another investigation aspect, the process of urban formation, is defined as the concrete phenomenon for understanding and appreciating the sequence of events and acts of buildings which have formed the context throughout history. In urban form studies, it would refer to the historical and socio-cultural values of the context. The arrangement of parts is another matter for investigation, being important for understanding the interrelation between individual parts, and between the individual parts and the whole. Such an investigation method would be appropriate for investigating the physical and morphological values of the context in urban conservation studies (Rifaioğlu, 2012).

Finally, Kropf (1993, p.11) discusses the issue of interpretation, which is proposed for investigating the vague aspects of the sense of built environment by understanding “the forms which contribute to a whole and make the means of identifying those forms identifiable and repeatable”. This method refers directly to the tangible architectural features of the context and would allow the architectural and typological orders and/or values of the urban context to be determined.

Although interpretation is the key means of understanding the sense of built environment, Kropf leave[s] aside the ontological meanings of the object and aims to understand and identify the repeatable forms of the context in an assessment of the sense of built environment. The logic of his aim relies on addressing the problems faced in ontological investigations which may define subjective, expert’s and/or observer’s own viewpoints and values. (Rifaioğlu & Şahin Güçhan, 2013).

Essentially, urban form studies are almost wholly driven by the expert, and all of the values identified in the analysis are given by experts. Accordingly, their roles and values can be held up to criticism, since urban forms result from different value systems and shape different identities for different groups.

Yet in most national conservation systems it is the experts who observe the historic urban context, using objective tools so as to designate and conserve a very delicate and subjective subject, the spirit of built environment. It is important to find the intimate, hidden, unidentified, subjective values of the context through the use of objective tools and methods that have been created over time between the physical urban context and the experiences of different social groups, occupants and users.

Urban form studies normally seek to assess the character of the built environment through typological, morphological and architectural analysis. Nevertheless, although the identity of an
area may persist through time, spirit of place can change as its inhabitancy or users change. This leads to the questions of how can experts understand the intimate values and define its continuity through observations and/or interpretations, since the residents change, the way and standards of living change, the physical structures, and the overall socio-cultural context change in time?

This is an important subject that is both theoretically and practically important and difficult subject to address in urban form studies; and still the right tools are yet to be found for understanding and conserving the very delicate subject and its comprehensible meanings from tangible features to intangible ones.

As Pendlebury stated (2009, p.13); "...conservation as a practice needs to evolve reflexively; it needs to embrace new understandings of the social role of heritage and its conservation, while retaining and sustaining many of its core principles. This is a difficult challenge".

On the other hand, related with interpretation, there are many urban form studies on mathematical interpretation of urban forms in order to present “the influence of various different cultures, geographical and climatic conditions in the historical process” (Topçu, 2019, p.212). Close relatedly to the case study of this research, Kubat and Topçu’s urban form studies on mathematical interpretations were focused on “understanding the morphological transformation of Antakya in term of spatial integration” (Topçu & Kubat, 2012, p.8251:1) and “morphological analysis of urban textures...which have been shaped through the influence of different cultures in historical period” (Kubat & Topçu, 2009, p. 335).

This research, therefore, has aimed to investigate how property rights have affected the formation of historical urban contexts, and particularly in the historical urban core of Antakya. It clarifies the physiognomy/physis, the nature; and gnomon, the interpreter – of the historical urban core of Antakya, referring to the ontology of the physical environment and its builder. The physiognomy of a city derives from and/or is influenced by the property rights that brought order to the creation of the urban form and built consensus within the users of the urbanised environment. As Aristotle stressed, “order becomes custom,” and has a crucial impact on the creation of logical and meaningful relations between the concrete phenomena – the built form – and the abstract symbolic and existential meaning – the human experience. Therefore, the research proposes that the property rights in an urban setting is merit investigation in an attempt to define the historic unknown urban grammar of Antakya which consists the invisible links and values that have emerged
between the urban form and its inhabitants. This consideration of how an urban form is created and regulated according to property rights in the title deeds is a subject that has to date not been investigated in the Islamic-Ottoman urban form studies. The city of Antakya has been selected for the case study due to its rich historical and multi-cultural urban core, which was first affected and formed under the influence of Islamic ownership norms, and then developed under the Ottoman land tenure system. Additionally, as archive documents such as Ottoman title deeds have been translated into Turkish alphabets, and the cadastral plans of the urban form have been prepared during the French Mandate Period, they can be viewed as sources of reliable information on ownership norms and property rights for every single property unit, which is a key asset when attempting to decode the physical urban structure and reveal the hidden salience of the city.

In revealing the historic unknown urban grammar of an Islamic-Ottoman city through property rights in the title deeds records of Antakya, this research is mainly divided into three parts. After introduction, the property rights are discussed and then the relation of property rights and the historic urban pattern of Antakya is presented. Finally, the effects of property rights for decoding the historic unknown urban grammar of Antakya is discussed.

PROPERTY RIGHTS
Property rights have been a common feature of different civilizations since medieval times. They were defined in Common Law as “upwards to infinity and downwards to the centre of the earth” (Umur, 1990; Lawson, 1958; Günay, 1999). This is a strict right of use (usus), collection of fruits (fructus), and use to the exhaustion (abusus) of the object of property (Günay, 1999, p.5). However, codes and treatises were, throughout history, defined to regulate property rights in accordance with the shaping of urban form. The earliest example of these dates back to the Eastern Roman Empire, being Julian of Ascalon’s Treatise, written in 531-533 AD which is the oldest document discovered to date defining property rights and their effects on the shaping of cities (Hakim, 2001).

After the Julian treatise, there were various other treatises declared in different periods that affected the shaping of urban forms. When the treatises and the property rights are taken into consideration in the Islamic cities, it is clearly apparent that Islamic cities were shaped under property rights that were essentially based on the traditional Islamic rights and a Westernized modern law of property, while also retaining some
of the characteristics of the traditional rights of property (Hakim, 2001).

The Pre-Modern Property Rights: Tradition and Religion
The general ownership mechanism in the pre-modern period of Islamic cities is based on three main aspects: the establishment of ownership through appropriation, which is the logical origin of any ownership in the Islamic property system; transfer of ownership through sale or donation by an individual or the government; and continuity of ownership through inheritance (Akbar, 1988).

Pre-modern property rights in the ownership mechanism are furthermore shaped by three main interrelated provisions: traditional Islamic principles, public interest and personal reasoning. In particular, it is the public interest rights that address the tangible and intangible benefits to the community, such as the property rights of the landless poor, slum dwellers and squatters; the use of public zones and services within and around the urban form; and beneficial rights for worship and the morals and customs of the public (Sait, 2010, p.32).

On the other hand, it is personal reasoning that addresses the benefits and liabilities of neighbors, inheritance, morals, customs, welfare, and so forth. These are related closely to society; the shape of the urban form; and geographical cultural differences, and accordingly, property rights that derive from personal reasoning can vary from one case to another.

The pre-modern Islamic property rights can be linked to a tall tree, which has influence both below and above the earth. It rises from out of the ground, which is the source of its existence; then it forms its body; and finally becomes a source of benefit for believers by providing fructus. The analogy of the tall tree is firstly used and defined in this research as a philosophical tool to explain the rules and rights related to property, and their role in managing the process of growth and shaping the urban form under the main tangible and intangible aspects in the following framework:

The root: The lands within the city and in its surroundings, as a fundamental aspect of the city
The body: The built environment, which derives from the root and is formed by the property rights
The branch: Liabilities and benefits of public streets and cul-de-sacs
The fructus: The rights of intervention and the prevention of damage to building materials and architectural elements
The users: The owners and tenants, and their benefits and liabilities
The Root: Land
During the early-Islamic period, land ownership and use were a common undertaking for all schools of law. Since the towns were expanding and the cities were forming, the issue of ownership and use of lands was discussed extensively, and thus certain rights were established related to them.
Land rights were closely related to the productive use of land. Generally, an individual who worked unutilized lands would have priority over another in terms of access to the land and the benefit to be gained from it. However, unutilized land could not be owned by individuals. Land came in two forms, namely: protected lands (Harim) and dead lands (Mawat), which were established and defined with certain property rights by the Islamic school of laws in order to develop and control the urban form (Akbar, 1988).
Another important land type in Islamic urban forms was agricultural lands. The study of agricultural lands is important when they were located in the periphery of an urban area, since they would likely be transforming over time into urban areas. Agricultural land in general was dealt with in two major sections of the legal system: agricultural land owned by the state and benefited by individuals; and agricultural land is owned by individuals and benefited by others (Akbar, 1988).

The Body: Built Environment
The built environment of Islamic cities was derived from the responsibilities that were allocated and negotiations between individuals affected by the notion of property rights. At the level of neighborhood formation, Muslim schools of law established the qawa’id fiqhiyya – meaning “overarching legal principles that formed the framework within which the Muslim community that set out rules that people understood, respected and followed when making decisions that affected the design of their houses and the manner in which those decisions affected adjacent buildings” (Hakim, 2010, p.209). All schools of law agreed that the basic principles were the starting point of the establishment of secondary principles and rules to form and change the built environment. The qawa’ids came with a set of rules and rights related to formations and alterations to dwellings in the Islamic urban form. Considering the built environment at the single unit level, the origin of the principles was based upon the maxim of do not harm others, and others should not harm you, which become the leading rule in the organization and control of the built environment. This applied to every single formation and change to each single unit in the built environment, with the intention being not to harm to one’s neighbors or other citizens, and vice-versa.
The Branch: Streets
The street is an important element of the urban form that serves to shape and control the built environment. Factually, there were two types of street that existed in Islamic urban forms: streets and culs-de-sac, each with their own property rights. Streets are classified as open and continuous urban elements that are open to everybody and controlled by rules of public right-of-way. Cul-de-sac, on the other hand, are classified as no-exit streets that in some cases do not belong to the public, and as such could be considered as part of adjacent or bordering properties. Accordingly, they have different property rights than public streets and their use, sharing and control are specified under the culs-de-sac property rights in Islamic urban forms1.

The Fructus: Building Materials and Architectural Elements
Small and invaluable objects that exist within the urban form could be taken if neglected by the owner for a long time. An example of such objects would be building materials, which could be picked up, since the person who picks them up may derive benefit from them. This principle does not apply in such cases as when objects fall from a building without the owner's knowledge. However, the rights of interventions and the prevention of damage to architectural elements are an important matter, focusing on the rights of ownership and usage of the walls between neighbors and the architectural elements.

The Users: Owners and Tenants
The principles of the use of the urban form and rights and responsibilities between owners and tenants reflected the specific dialectic links within the experience of the urban form and can be studied at two scales: the single dwelling scale, and the neighborhood scale.
At the dwelling scale, the tenants were evidently responsible for what makes a property usable and functional. They are responsible for maintaining the walls, doors and other architectural elements; and also, for the functionality of the well and its safe use by the household. Tenants are also responsible for the privacy of the dwelling, and no interventions would be allowed that affected to the privacy of the dwelling. In such a case, the tenant would have to remove the unwanted interventions and retain the dwelling privacy, or face losing his tenancy.
Several rights and responsibilities were also established for property owners. The owner must rebuild a wall if it collapses, exchange a wooden beam if it breaks, fix doors and ensure a constant water supply, since such repairs keep the property usable (Akbar, 1988).

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1 This situation will be investigating in the case study phase of the research, as there is a lot of information in the archives. As such, the subject will be defined and detailed from the title deeds records of the case study.
ANTAKYA HISTORIC URBAN FORM UNDER THE INFLUENCE OF PROPERTY RIGHTS

This research into the relationship between the property rights and urban form focuses on a conceptually new and contextually rational, effective and orthodox control mechanism that contributed to the formation of the historical urban pattern of Antakya. These are understood and defined as property rights in this research and are identified as "benefits" and "liabilities" in the title deeds.

Ownership benefits and liabilities are the specific descriptions and obligations not only for the plot owners, but also the city's inhabitants. According to the title deeds, plot owners may have different benefits and/or liabilities relating to a specified plot, which take the form of detailed, strict and enforceable rights over the tangible and intangible features of the urban form. They play a key role in creating rational solutions for the physical, morphological, social and cultural aspects of the urban pattern. There are many interrelations through the urban form that produced from the property rights.

Therefore, this research has been designed under a holistic, accurate and factual methodology in order to better understand the links and interrelations between property rights and urban form. It has been structured in three main phases:

- documenting phase, comprising archive studies conducted in the research
- digitizing phase, covering the office work
- analysis and evaluation phase, comprising correlations and site surveys

The documenting phase of the research consisted of a collection of data from the title deeds records of the Antakya historic urban pattern and gathering of the cadastral maps which were prepared in French Mandate Period of the city.

Parallel to the collection of data from the title deeds, the documenting phase continued with the conversion of the French cadastral Maps into the GIS medium. The aim of this stage is to have a geographical database which is correlated within the coordinate systems of Antakya, and to have a database for the data collected from title deeds.

In addition, another database is prepared according to the collected data from the title deeds. It is crucial in helping to transfer the 130,000 data points to the GIS medium. The research continued with an analysis and evaluation of the data on the title deeds and the historical cadastral maps. The
circumscription plot pattern, area of plots, districts, the features of real estate properties, the way of acquiring real estate, ownership patterns, religious-ethnic identity patterns, and benefits and liabilities of plots were mapped and analysed.

The data gathered from the analysis and evaluations of the property rights in the title deeds records and cadastral maps was surveyed within the current historic urban core of Antakya during several site-surveys conducted by the first author. The aim of site-survey is to investigate the important features of the Islamic-Ottoman urban form through the existing urban fabric and seeking to understand the norms and rights of Islamic-Ottoman urban form still preserving their original relations in the current urban form5.

Benefits and Liabilities Through the Antakya Historic Urban Form

There were different benefits and liabilities that affected to formation of Antakya historic urban context. They can be grouped as passage, use, construction and other benefits and liabilities.

Passage Benefits and Liabilities

Passage benefits and liabilities are grouped under two sub-headings: passage benefits and liabilities to which are referred a spatial reference; and referred non-spatial references. The spatial passage benefits, and liabilities allow an understanding of the way the inhabitants moved through and experienced the urban form. One of spatial passing benefits and liabilities investigated in this research is passage benefit from commonly owned culs-de-sac. Private culs-de-sac are commonly owned by the individuals within that building block, but passage benefit is given to a group of inhabitants as the right to pass through the private cul-de-sac (Figure 1). This benefit is given to those who need to pass through a private cul-de-sac, by which the benefit owner has the right to pass.

5 Corresponded author is presented his original findings of the site-survey phase focusing on relations between property rights and the current urban form by using relational photos in the following sections of the manuscript.
For this benefit, there is a liability defined in the title deeds. It is defined as the liability to give permission to specific property owners who need to pass through commonly owned private cul-de-sac. This liability is generally given for those with a direct access to their house from the private cul-de-sac but are not a co-owner of the cul-de-sac. In this case, the owners of the cul-de-sac are liable to give permission to them. The owners of private cul-de-sac cannot obstruct the passage of those with the right to pass through that cul-de-sac.

Another passage right is related to the case of two adjacent plots, defined as passage or entry right to a neighbours’ plot. In this case, the owners of the adjacent plots are both beneficial owners and are liable for giving permission for passage. This property right can be applied in cases of non-adjacent plots. According to the property right, the benefit owner can enter somebody else’s property not located adjacent to his/her property, passing through another’s property. In this case, according to the property right, the property owner located between two plots is liable to give permission for movement, by which the benefit
owner will be able to pass from one plot in order to access another specified plot.

While spatial passage property rights are detailed according to the purpose of movement, they are also clearly mentioned and defined in the title deeds. One such beneficial right is for passage through a plot to obtain water from a well located in another plot. According to this benefit, the beneficial owner can only pass through the plots to take water from another specified plot. Accordingly, the owner of the well is to share his well with the beneficial owner.

A liability defined so as to ensure the realization of the benefit, in this case for a specific purpose. The benefit owner may only pass through the liable plot to take the water from the other plot; and the liable owner is not obliged to give permission for passing through his/her property for other purposes.

The passage benefits for obtaining water is also defined in passage through a plot to obtain water from the water well. This time, the well is located on the adjacent plot, and the benefit owner cannot pass through any another plot in order to reach the well.

In this case, the owner of the well, being the liable owner, has to give permission to the benefit owners to obtain water from the well.

Besides those benefits and liabilities related to accessing a well to obtain water, there are other benefits and liabilities defined for accessing a toilet. According to the benefit, the benefit owner can pass through somebody else’s plot in order to reach to the plot on which the specified toilet is located.

In this case, the owner of the toilet would be liable to give permission to the benefit owner for use of the toilet. Additionally, the other plot owners located on the passage route between the benefit owner’s property to the toilet are obliged to give permission to the benefit owner to access the toilet.

The passage right for access to a toilet may also apply for adjacent plots. The benefit owner should be able to pass through an adjacent plot in order to access the toilet. In this case, the owner of the toilet is naturally a liable owner in giving permission to the benefit owner to pass through his/her plot to access the toilet.

In some cases, the passage benefit is defined for a specific place as a benefit right for passage through somebody else’s property from the entrance part of the house or under the staircase. This right is given in very intricate plot formations, where the benefit owner can only access to his/her property by passing through an adjacent property. In this case, the adjacent property owner becomes liable for giving permission to the beneficial owner to access his/her property through a specified place.
Such spatial passing benefits and liability rights were common property rights throughout the historical urban pattern of Antakya (Figure 2). However, locationally it is created zones through the urban form. Spatial passage benefits and liabilities were defined mostly for the residential area of the fabric; however, some properties in the historical commercial zone also required spatial passage benefits. For whatever the reason, passage from one plot to another was very common, especially on the west side of Kurtuluş Street towards the north-east of the fabric. On the western declivity of Mount Habib Neccar, spatial passage benefits for access to toilets and wells were quite common.

Figure 2. The distribution of parcels having spatial passage benefits throughout the historic urban pattern (Prepared by Rifaioğlu, M.N.).

Although the passage benefit for commonly owned culs-de-sac was defined for many private culs-de-sac, such situations where most common on the south-west and north-east side of the urban fabric, in the Christian and Alewite settlements, where the private culs-de-sac were very long. On the south-west of the urban fabric, characterized by long public culs-de-sac and differently arranged plots from the rest of the fabric, spatial passing benefits were extremely rare (Figure 2).
Non-spatial passing benefits and liabilities are related to the flow of natural aspects throughout the urban form, rather than the movement of inhabitants. Different property rights are defined related to the drainage of water between properties, natural ventilation and the flow of rivers under the urban form.

One of the most common non-spatial property rights defined in the title deeds is the right to discharge and drain winter water and/or the water right. According to this property right, the benefit owner would be able to discharge winter water or normal water onto the neighboring plot, with the relevant plot specified in the title deeds. The benefit owner would be prohibited from discharging winter water onto any other plot. Under these circumstances, the neighboring plot owner has a liability to accept the drained water onto his/her plot. Additionally, the neighboring plot owner can be able to have draining the water to the other neighboring plot. In this way, the first neighboring plot owner can be both a liable owner and a beneficial owner in the discharge of winter water.

Although there are a small number of individual cases seen in the historic urban form, this property right is more concentrated in the commercial zone and on the south-west side of urban form in the residential zone (Figure 3). In the commercial zone, the water discharge right is primarily given to the soap factories and is related with the topography. Soap factory owners have the right to discharge water towards the inclined topography, and the neighboring plot owners are liable to allow such water discharges over their properties (Figure 3). In the residential zone, again according to the topography, property owners have the right to discharge winter water onto other houses. In this case, the property owners have both beneficial and liability rights.

Another non-spatial passing right is related to the passage of air between neighboring plots and the plots located at a distance between them. Air passage rights are defined in the title deeds as...
air passing right between the common wall of neighboring plots. In this case, the neighboring plot owners have the right to benefit from the air passing between their properties. This property right is also defined as air passing right from a specific location within the urban fabric. In this case, the beneficial owner can take air from a specific place at a distance from his/her property. Under these circumstances, in the case of air flowing in a specified direction, the plots located on the route of the flow of air are liable for allowing air to pass.

A further property right exists related to an established water channel between two plots. Any plot where located between them is liable to give permission for the passing of a water channel through his/her property.

There is only one example of the discharge of water onto an adjacent plot. This property right occurred between two residential properties, one of which was a beneficial owner and the other liable owner of the property right.

Property rights are applied not only to the built environment and how it is used by the inhabitants, but also to natural elements, the earth and below ground as well. In Antakya’s historic urban form, there are special passage rights defined for properties under which a river pass. The property right is defined in the liability section of the title deeds as liability for giving permission for the passage of a river band under the plot.

This liability is based on any intervention to the flow of a river passing under plots. The plot owners have responsibility for the ground below their plots, and the foundations of the buildings must be designed according to the liability (Figure 4).

This liability is seen in south-western part of historic urban form, which was developed in the Ottoman Period, and is related with the Akakir River that flowed from Mount Habib Neccar to Asi River. The owners of the row of plots that were developed over the river have a responsibility to ensure no un-wanted interventions are made to the river, and according to the liability, the river must be allowed to pass underneath them (Figure 4).
Use benefits and liabilities

Benefits and liabilities related to use are related to two situations: the use of a commonly owned well, toilet or wall; and use of somebody else’s well, toilet or barn. For such cases, the ownership of architectural elements and their principles of use are defined in the title deeds. Commonly owned water wells, toilets and walls existed throughout the residential area of the urban fabric and were generally owned by adjacent properties. There are only two situations in which a commonly owned well and toilet existed between two separately located plot owners. Commonly owned toilets, wells and kitchens were common in private culs-de-sac (Figure 5). The ownership of the well, toilet or wall would be noted in the title deeds, and the use principle would be specified in the description of benefits and liabilities.
Benefits are only defined for commonly owned wells, toilets and walls, when located on adjacent plots with all owners having the benefit of their use. An ownership right and use benefit is
defined for common walls. The ownership of the wall is defined according to the exact locations and the lengths noted in the title deeds, and accordingly, the benefit. According to Islamic property rights, the owners of wells, toilets and walls have an obligation to maintain them. Use benefits and liabilities are also defined for somebody else’s wells, toilets, barns and pits. In this case, the beneficial owner is not a common owner, having rights only related to their use under beneficial rights. Therefore, the owners are obliged to give permission for the use of their architectural elements by beneficial owners. Such situations in regarding the use of somebody else’s well, toilet or barn can be seen in the residential zone of the historic urban form.

The use benefit for somebody else’s pits is only defined for the tanneries in the northern part of the urban pattern, with the beneficial owners being artisans, who have the right to use the pits located on the plots of tanneries (Figure 6).

**Construction benefits and liabilities**

Construction benefits are generally related to building activities on empty plots or in development areas throughout the historical urban pattern. In the case of Antakya, however, they are found more frequently than would be normally expected, as they may allow specific intervention principles and/or solutions within the complex, introverted and organic historic urban form. Accordingly, they have a crucial role to play not only in controlling specific construction activities, but also in allowing additions or alterations to properties and preventing uncontrolled physical interventions.

One of the construction benefits investigated in this research is *projection benefits*, which generally occur in traditional dwellings when an owner wishes to make an addition to their property that projects over someone else’s property. These are classified under two sub-groups in this research namely: “projection benefits over culs-de-sac” and “projection benefits over someone else’s plot”.

Essentially, there are two types of projection benefits defined for culs-de-sac; one being “the benefit for constructing a projected room over a cul-de-sac” (Figure 7) and the other being “the benefit for constructing a projecting facade over a cul-de-sac”.

It is important to note that these type of ownership benefits are commonly used for privately owned and used culs-de-sac rather than semi-private ones, and that there are also liabilities to be applied in this benefit. For example, if a plot has a projection benefit over a cul-de-sac of multiple ownership, the owners of the cul-de-sac must allow and/or not obstruct the construction of the projection.

The other sub-group covers projection benefits over somebody else's plot. The owner of this benefit can construct a projection over an adjacent plot, and the neighboring plot owner is obliged to give permission for the construction activity. In some cases, this benefit is defined according to a particular place, location, etc. For example, it is clearly written in the title deeds that the projection can only built over the toilet or well of the neighbor’s toilet or well, and accordingly the benefit owner would be prohibited from building a projection in any other place. Also, the neighbor has to give permission for the construction of a projection as a liable owner.
In Antakya, projection benefits are concentrated on the east part of historic urban form, where there is more private culs-de-sac than in the rest of the fabric. Fundamentally, they still exist throughout the urban form as a characteristic feature of Antakya’s historic urban form that developed over time, especially by influencing and enabling property rights.

Another construction benefit and liability group relate to building construction benefits. This group of benefits not only deals with building activities on the benefit owner’s own plot, but also those related directly to building activities on somebody else’s plot. These deal with benefits for constructing a building on somebody else’s plot (Figure 8); benefits for the construction of a barn on somebody else’s plot; and the construction of a building over somebody else’s well. The plots belonging to others can be adjacent plots or any specified plot in the urban form. In this case, if other the plots of others are affected by the construction activity, they may also be liable for it (for example, allowing access).

In addition to the building construction benefits, there are other construction benefits applying to small-scale physical interventions and/or alterations to the urban form. Strikingly, these benefits are not only related to interventions that occur between neighboring plots, but also have strong enforcements for alterations that occur both inside and outside the dwellings that are indirectly affected to the adjacent plots.

The resting timber wall benefit is used in the case of one owner wishing to build a timber structure against a common wall. According to the benefit, the plot owner can build a timber-framed wall against (i.e. supported by) a neighbor’s wall. The
owner of the neighboring plot is obliged to give permission for such a construction.
Constructing a cupboard against a common wall and opening a window through to the neighboring plot are other small-scale alteration benefits for dwellings. This benefit enables the construction of embedded cupboards against a common wall.

Other property rights
Other individual property rights that existed throughout the historic urban form include the benefit right for overlooking somebody else’s plot. This benefit right, in some cases, is given for a specific place – for example the benefit of overlooking somebody else’s courtyard from an upper-floor window, or a private cul-de-sac.
A benefit is also defined for opening a new window that will overlook somebody else’s plot. In this case, the benefit owner can open a window, as specified in the title deed record, and therefore can look through the window onto somebody else’s plot. Under these circumstances, the liable owner has to give permission for the creation of the opening. These property rights are classified in this research as visual interaction benefits and liabilities.
Another unique property right is defined as giving property incomes to the poor, written specifically as “Antakya’s poor inhabitants”. This property right applies to some of the shops located in the commercial zone of the historic urban form. According to the property right, the benefit owners are the inhabitants, and the owners of specified shops are obliged to give a proportion of the income of the shop to Antakya’s poor inhabitants. This property right is referred to as charitable benefits and liabilities in this research.
The final property right is related to the burying of her relatives on somebody else’s plot. This benefit is clearly written who are to be buried in which specific plot, with their names and family information. The liable plot owner must give permission to the specified person to bury his/her relatives’. This property right is referred to as spiritual benefits and liabilities in this research.

THE UNKNOWN HISTORIC URBAN GRAMMAR
This phase of research concentrates on decoding the unknown grammar and identifying the invisible links and values that exist within the historic urban form through a combined evaluation of ownership, use and property rights. By using this method, the research aims to reveal the esoteric relations that exist between the physical context and the experiences of the inhabitants according to the title deeds records. It is worth mentioning here that these relations provide very important clues as to decode of
unknown historic urban grammar of the order of urban form, and in defining the hidden values of Antakya.

The Correlation Between Ownership and Use

The correlation between ownership and use reveals a different kind of building type that cannot be defined through a survey of the current urban form, namely the residential-religious buildings.

If the owner of a dwelling was a religious foundation, and the title deeds clearly state that the dwelling was to be used for religious purposes, then the users would have a spiritual connection with the building. These are referred to as residential-religious buildings in this research.

Several different religious-residential buildings existed within the historic urban form, including those belonging to the foundations of minority groups like the Alewites and Christians; while other residential-religious buildings were owned by dervish foundations. The Alewites’ residential-religious dwellings were concentrated in the southern part of the urban fabric, and today some of them are used for residential purposes, while others lie vacant.

Although Christian foundations owned monumental Churches spread throughout the historical urban pattern, there were only a small number of Christian foundations, such as the Caphuchins Priests Foundation, which owned dwellings for religious purposes in the form of house-churches. Additionally, dervish lodge foundations owned dwellings for religious use.

In addition, different sized residential buildings, many of them small (around 10–15 m²) are defined in the title deeds as one-room dwellings owned by Alewite foundations and citizens. Their locations within the urban fabric give reliable clues to the social and spiritual interactions between the owners and users of the dwellings. The resolution of these two different aspects shows that the small one-room dwellings are located generally in the south and north of the historic urban form, where the Alewite citizens lived. These single-room dwellings are clustered around the religious and/or religious-residential buildings of the Alewites. A deeper investigation shows that one-room dwellings were used mostly by religious Alewites. Most of them still exist, and some of them are in normal occupation, while others are vacant or have been demolished during urban development activities (Figure 9).
Additionally, there are single-room dwellings that were owned by Sunni foundations, located close to the mosques and occupied by Imams. Today, they are no longer in use, and while most of them still exist, others have been demolished. The plots of some single-room dwelling were narrow and rectangular, and have suffered total collapse, and have since been replaced by public culs-de-sac. Most of the religious buildings owned by foundations are still used for religious purposes. Alewite visitations are commonly located in private culs-de-sac and retain their function today.

The correlation between ownership and use continues within the commercial nuclei, where shops and bakeries are located next to one another. It can be seen that the commercial nuclei are located next to religious buildings and have a generic formation in the districts of all of the different ethnic-religious groups within the historic urban form. Most were owned by individuals and they are still in use.

The use of bakeries throughout the urban fabric has remained stable, however their ownership status has changed. For example, a bakery owned by the Armenian population of Antakya in 1929 is still in use and is owned by the Alewites today. Haysem, the current owner of the bakery said, "The bakery was abandoned by the Armenians, and since then it has been used in its original function by my family".

The commercial zone of the historic urban form was used by all different ethnic-religious groups, with individual ownership being common in the area. However, differences existed in the way trade activities were conducted related to the ethnic-religious identity of the owners. The minority Jews commonly owned the fabric workshops; Christians owned the jewellery...
workshops; and the Alewites generally owned the bakeries and grocery shops. The large monumental commercial buildings, such as soap factories and khans, were most often owned by the majority group – the Sunni Muslims. There are sub-commercial zones, or *arastas*, within the commercial area of the urban pattern in which many souks were established for the trade of specific goods.

**The Correlation Between Property Rights and Use**

The evaluation of property rights and the use of the urban fabric by the inhabitants revealed different invisible links that have affected the shaping of the urban form of Antakya. According to the spatial passage benefits and the use of the services, there is a dense movement of inhabitants through the introverted urban form, concentrated on the western declivity of Mount Habib Neccar. The common reason for the movement of inhabitants is to obtain water from the well and to access the toilet. It is significant that the beneficial and liable owners are commonly from the same ethnic-religious groups.

Another aspect worthy of note is movements that are not limited to adjacent plots or to plots located next to one another. According to the property rights, there can be a movement from a different part of the urban form. For example, the beneficial owners of the passage right through the private cul-de-sac of the Alewite visitation can be from any part of the urban form. Accordingly, owners of the passage right can enter private cul-de-sac to access a place of worship.

The correlation between the service buildings and the non-spatial passage benefits indicates an orthodox solution for sustaining the public bath by orienting winter waters towards it. In the residential zone, there is only one area in which the winter water discharge benefits and liabilities are concentrated. When the area is co-related with the use of public baths, it can be seen that the direction of the drainage/passage of winter water is towards to the Cindi public bath.

There are two public baths located on the river, of which the Cindi Bath is the second. After the first public bath, there is a property right in place to increase the amount of water discharging towards the Cindi Bath (Figure 10). The combination of benefits and liabilities throughout the urban pattern offers a clear perspective of use and the forming of the physical fabric, and the way in which inhabitants experience that fabric.
CONCLUSION
Antakya has been home to many different civilizations throughout its history, during which it has been subjected to a diversity of successes, significant upheavals and disasters. A few archaeological edifices still exist from ancient times, and the historic urban core of Antakya in the present day still contains characteristics that date from the Memluk era to Ottoman period. The intention of this research is to reveal the dialectic links between property rights and the formation of the historic urban core of Antakya. In the analysis, the ownership, use and property rights are evaluated and correlated with each other in order to reveal the esoteric relationships under the formation of the physical urban context. The invisible links and values that exist within the urban context are defined through an evaluation of property rights, which are investigated throughout the urban form through a site survey.

The study of the cadastral maps and title deeds allowed a unique perspective of the interrelations between the physical and social aspects of the urban core. It should be mentioned here that these aspects provide very important clues when attempting to uncover the “spirit of the settlement” as well as the “spirit of place” in a historical urban setting.

This research into the relationship between the ownership system and the urban form is based on a conceptually new and contextually rational, effective and orthodox control mechanism related to urban formation and the persistence of the historic urban core of Antakya. These mechanisms are defined as “property rights” in this research and are described as “benefits” and “liabilities” in the title deeds.

The ownership benefits and liabilities are the specific descriptions and obligations not only for the plot owners, but also for the inhabitants of the city. According to the title deeds, plot owners may be subject to different kinds of benefits and/or liabilities related to a specific plot in the form of detailed, strict and enforceable rights over both the tangible and intangible features of the urban form. They have a key role to play in the
forming of rational solutions for the physical, morphological, social and cultural aspects of the urban core, such as:

- ownership rights relating to relationships between topography and the urban form
- the formation of the street layout and the built environment
- physical interventions throughout the urban core
- the movement of inhabitants within an introverted and complex urban form
- consideration of natural elements in the formation of the urban form
- the formation of services such as wells, toilets, etc. and their use
- spiritual and socio-cultural activities within the urban form, and so forth.

In the Antakya case, an analysis and evaluation of the influence of ownership, use and property rights would allow a clarification of the combination of tangible and intangible values that exist within the urban context and make it significant. Property rights are not only an important factor in the formation of urban form, but also for identifying and conserving the dialectic links between the inhabitants and the historic urban form, creating spirit of place. This investigation into three constant parameters creates a foundation of knowledge on the underlying, hidden aspects and beliefs at work in the formation of urban form and will be of great benefit in current holistic urban conservation studies. It is also an important input for the understanding and assessment of historical urban contexts and may help in the elimination of generalisations.

Fundamentally, this research clarifies that ownership has the means of affecting something that lies beyond the existence, beyond the apparent, beyond the known and beyond the man-made settlement boundaries that define elusive historical urban forms. The Antakya case reveals clearly that property rights have major implications when attempting to understand the formation and persistence of every single component of an urban form; and accordingly, these aspects deserve greater consideration in urban studies such as urban morphology, design and conservation when attempting to make holistic assessments. Last but not least, ownership norms help one to understand and identify the esoteric features and their effects on the formation of the urban form, which is something that cannot be clarified through the survey methodologies of other urban disciplines. Accordingly, the persistence and effectiveness of property rights is also an important issue for sustainability and in the
conservation of the character of the historic urban form of Antakya.

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Resume
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