Disorder by Design: Chaos in Urban Transformation Within Ultra-Orthodox Neighbourhoods

Abstract

This paper employs a critical theoretical framework to examine the emergence and perpetuation of chaos and disorder in urban spaces. Specifically, we examine the dynamics of chaos during urban transformations, focusing on how it manifests itself in the redevelopment of religious enclaves and its *implications for the daily lives of urban residents in two Haredi neighbourhoods in Jerusalem.* We have coined the term 'constant urban chaos' to characterize this space as both the source and the desired outcome. These spaces of chaos reveal how neighbourhoods are shaped by individual and collective initiatives to preserve the communal ways of life through spatial patterns. *Our findings suggest that chaos serves a specific purpose in urban development, providing desirable patterns that sustain city intricacies and delicate networks. Using this mutually beneficial arrangement, the municipality and communities meet the housing needs of specific demographic groups characterized by high fertility rates and non-conventional housing needs while minimizing socio-spatial conflicts. In examining the intricate interplay between urban chaos, community dynamics, and municipal involvement, this study challenges conventional notions of disorder and highlights the strategic utilization of chaos for urban development.*

Introduction

The transformation and evolution of ethno-religious enclaves, which are prevalent in urban landscapes worldwide, have been a central focus of urban studies (Rosen and Razin, 2008). A variety of analyses have been conducted, both on self-segregation and external factors such as exclusion and discrimination that shape enclaves (Peach and Gale, 2003; Walks and Bourne, 2006). Furthermore, scholars have studied the violation of statutory or "rational" planning and the ways that enclaves can be reaffirmed through reinforced communal arrangements and orders (Beauregard, 2013; Cozzolino, 2022). Yet, a deeper

understanding of how chaos and chaotic spaces impact urban enclaves remains to be undeveloped, specifically the questions: how different stakeholders perceive the importance of illegal constructions? How do they interact with each other in the process of space production? What kinds of orders are embedded in such spaces, and what roles do different stakeholders play in shaping this order?

Work performed without a valid permit is considered illegal construction, which poses potential technical hazards on uncontrolled construction sites and in finished buildings and fails to comply with local building codes, zoning regulations, safety standards, and other legal requirements, disrupting the orderly functioning of the city. Drawing on Lyle's (2000) definition of urban chaos, this paper describes this situation as the cumulative effect of illegal building in urban areas, resulting in disorder and confusion. Chaos is often viewed as a negative force that adversely affects people, materials, and urban planning (He et al, 2010; Becerril, 2019), however, we contend that city organizations, citizens, and community leaders purposefully utilize an unregulated state of disorder for their purposes. Building on this conceptual framework, we extend our analysis to include the synergistic effects of various organizational levels on urban chaos influenced by three key factors: (1) economics, religion and cultural imperatives, (2) the cycle of informal development, and (3) spatial distribution of illegal constructions. Our examination reveals latent orders that undermine and subvert the concept of chaos as a disorder and create elements and even patterns of order at the level of the small urban units. Demonstrating how urban chaotic spheres serve as a comprehensive framework for understanding city spaces challenges conventional notions of order and chaos, the built and the wild, the constructed and the destroyed, the developed and the undeveloped.

This study explores the role of religion (e.g., concerns and interests of local communities) in the creation and governance of chaos persistence, its evolving dynamics, and its impact on Haredi (Ultra-Orthodox Jewish) enclaves and residents. Haredi enclaves in Jerusalem have experienced an increase in housing prices in recent decades due to demographic pressures and the need to maintain a community-based Halachic lifestyle. In

response to this process, the city council initiated several interventions including urban renewal projects to upgrade and restore existing residential, commercial, and infrastructure complexes. In addition, they included a densification plan. Weak structures, for example, have been reinforced to resist most of the seismic forces of an earthquake. Alongside these official steps, rampant unregulated development occurs because of undeclared additions to existing buildings. However, these renovations are not always beneficial to the residents or consistent with sound urban planning. We examine two Haredi enclaves in Jerusalem that represent two distinct individual and group initiatives. Ramat Shlomo is a new, peripheral neighbourhood that was planned and built for the Haredi community in the mid-1990s. Haredi housing committees selected Ramat Shlomo's population based on the relative shares of each community in the city. Sanhedria, however, is an old neighbourhood in the inner city, developed gradually into an attractive Haredi enclave because of individual residential decisions. Although both neighbourhoods house members of the same major groups, their communal and organizational frameworks are vastly different.

We contend that studying urban chaos in religious enclaves through the unique requirements, institutions, planning, and construction involved, provides a fresh and valuable perspective on the significance and consequences of the underlying dynamics of order and disorder within urban spaces. Based on our data, we believe this type of investigation will enrich the urban theoretical perspective of informal settlements and the limits of state planning authority and legitimacy. In the following sections, we discuss the theoretical framework, our research methods, and case studies of Sanhedria and Ramat Shlomo.

Urban Chaos and Disorder

Since The Rime of the Ancient Mariner (Coleridge and Lowell 1919) the notion of "pandemonium" has been widely used in art, poetry and literature to describe chaotic states. Yeats (1921) in "The Second Coming" uses this term to describe the world's societies: “Things fall apart, the centre cannot hold…” For Milton (1667) and other poets, pandemonium is not only a phase in a specific place but has a specific architectural design,

a space that can be easily identified (Martin 1998). Selfridge (1959) introduced the concept of a machine capable of self-improvement and created the field of pandemonium architecture which consists of multiple groups of "demons" that work independently. As chaos encompasses elements of hidden orders, the sub-arena serves as the learning and feedback mechanism for the system (Henderson 1978). Studies indicate that patterns are perceived in terms of their parts before being seen (Grainger, et al. 2008). In this analogy, the learning mechanism operates similarly to other neural network systems, by modifying the connections between the “demons” and determining how they “respond to each other's yells” (Huchingson 2010). This multiple-agent approach to human information processing has since been adopted as the basis for many AI systems of visual perception.

Most of the academic literature on urban spaces has emphasized the role of social structures, power relations, complexity and planning and their influences on urban settings (Guillery 2018). There was less attention given to chaos and its influences on the complexity, unpredictability, and non-linearity of city spaces, as well as their informal and unplanned dynamics (Tran & Dalholm, 2005; Li *et al*, 2019). However, even the literature that focuses on chaotic urban spaces usually incorporates concepts like self-organization and bottom-up emergence in order to explain how chaotic urban systems change, adapt, and return to order over time (Graham 2011). Jacobs (1961) investigated the role of disorder and complexity in vibrant urban neighbourhoods. She discusses what makes streets safe and how neighbourhoods function within urban systems. Simone (2004) has written on the dynamics of chaos in rapidly growing cities in the Global South and examines the informal strategies used by residents to adapt within complex unorganized urban environments. Cruz's (2013) work on urban exception sites traced an imaginary line along the U.S.-Mexico border and extended it to create a political equator that divided the globe into a “Functioning Core” and “Non-Integrating Gap”. Wacquant’s (2016) work on the tangled nexus of symbolic, social, and physical space in the polarizing metropolis is crucial for understanding how municipal and national governments function as stratification and classification agencies in their response to sites and practices of exception in the city.

As a response to these works, Tzfadia and Yiftachel (2014) coined the term 'grey spaces' to describe spaces that are transient, adaptive, and have informal economic activity (Yiftachel and Tzfadia 2004; Yiftachel 2006). In urban literature and geography, grey spaces refers to urban areas characterized by ambiguity and informality, and often fall outside the conventional categories of urban designations. Since they are neither fully regulated nor completely unregulated, these spaces may exist in a liminal state. The areas may include vacant lots, abandoned buildings, underutilized infrastructure, informal settlements, or areas in which formal laws and regulations are not strictly enforced. In this perspective, grey spaces can become sites for cultural expressions and informal economies, challenging traditional notions of urban planning and governance.

In this paper, we follow the need for more flexible terms, as indicated by similar concepts such as "urban informality", "exceptionalism" or "grey spaces", all used in discussions of urban development, transformation, and regulation. However, while these concepts signify disorder, urban chaos encompasses elements of order and patterns of disorder by modifying the connections between the “demons” and "responses". In contrast to the concept grey spaces, which may hint at the potential embedded in disorder and often serve as incubators for grassroots initiatives, chaos indicates a state of challenging or thwarting patterns, the antithesis of urban planning. Therefore, unplanned urban spaces or areas that do not adhere to planning or related regulations should not be regarded as "urban chaos", but only if latent or explicit thwarting patterns exist. We use the term "urban chaos" to demonstrate that the perpetual state of chaos in the religious enclaves is not simply a consequence of the community's cultural, religious, economic, and family concerns; rather, it is a result of a complex urban dynamic perpetuated by the city agents, including Haredi leaders, city officials, and the citizens, which allows the maximum use of buildings and the development of creative solutions tailored to Haredi communities.

Ethno-religious transformation and the living spaces

The ongoing maintenance of chaos in city spaces is closely related to the ethno-religious demands of groups that modify their living spaces in accordance with their human, cultural and cosmological needs (Herz, 2008). Tipple et al. (2004) describe illegal buildings in Helwan and Cairo, suggesting living space shortages often lead to chaotic practices. In studies conducted in Bangladesh and Ghana, Tipple (1999, 2000) found that families who expanded their apartments were from low to medium socio-economic backgrounds. While illegal extensions reduce expenses, they lead to the conversion of uniform buildings into a mixture of apartments of different sizes, occupancies, pricing, and uses. Davis (2001) describes how Latino and Puerto-Rican communities in Los Angeles have created their own unique spaces and incorporated small businesses to residential areas. Though these "seasoning" add a minor cultural change to the space, the authorities failed to understand the needs of the newcomer community and enforced outdated zoning regulations rather than promote mixed-use areas.

Research on the transformation of neighbourhoods based on religious laws is scarce. Only a handful of studies have examined how incoming religious communities use religious laws to create spatial change, and how municipality and state planning mechanisms deal with it (Burchardt, 2013; Becci, 2015). Gale (2013) showed how mixed uses can arise from religious needs. He described how Muslim communities that moved into Christian neighbourhoods in Birmingham incorporated houses of prayer into their homes without permits. After neighbours complained about noise and crowds, a mechanism was created within the municipal authority under the pretext of equal enforcement that hindered Islam's spread in the city: limiting the hours of activity interfered with morning prayers, so mosques could not be built within buildings. Meanwhile, claims about oriental designs that did not fit with the surroundings or a lack of parking regulations prevented mosques from being constructed.

Sadouni (2013) examines Somali immigrants' arrival in Johannesburg, argues that religious symbols are also a territorial strategy for facilitating contact and association with the local population and history, and notes that a system of religious laws need not lead to

neighbourhood struggles and resistance. Bayat's "Quiet Encroachment of the Ordinary" (2012), however, refers to a gradual expansion of control, often through collective action without clear leadership, ideology, or structure. Bayat explained how the spontaneous migration of millions of people to Cairo's suburbs led to the illegal construction and repurposing of public housing. The residents' fight for rights and infrastructure evolved into confrontational and collective politics. In Bayat's view, small communities eventually form a cohesive force. To achieve equality in infrastructure and cultural and political independence, informal systems were established in parallel to state institutions, including a non-bank loan mechanism.

Haredi Housing: Special Demands, Institutions and Planning

The Haredi community bases its daily life on a religious and cultural ideology that emphasizes the primacy of the scriptures in shaping the beliefs and practices (Blumen, 2007). Haredi adherents follow Halachic rules and observe the commandments and laws outlined in scripture in terms of diet, dress, and social interactions. Common to the Haredi communities is the need to reflect values of modesty, gender segregation and rituals also in their living space. The community is organized as a `society of institutions` that reflect their religious beliefs and practices (Getzoff, 2020). A society of institutions is characterized by a high degree of institutionalization and formalization, with clear lines of authority and a well-defined system of social roles and responsibilities (Tzfadia, 2008). These educational, economic, religious, and legal institutions, which also include the family and children's socialization, play a key role in shaping and controlling the behaviour and experiences of individuals in the community. They establish norms and values, regulate social interactions, and provide a framework for social order. However, given the Haredi population's need to connect to the modern city, municipal services and consumer goods, members of the community often prefer to live within the enclave in areas that are easily accessible by public transportation.

In Israel, the Haredi population usually voluntarily segregates in enclaves allowing them to maintain close ties to their community and religious institutions, traditions, and culture. The high demand for housing solutions, resulting from the high birth rate, young marriage age (Gurevich and Cohen-Castro 2004), and the demand to maintain the purity of their community boundaries (Friedman 1991), meets with economic difficulties resulting from a high level of poverty, low levels of employment and large families, and requires creative solutions. To overcome these challenges, many Haredi families purchase apartments through a combination of communal support, government subsidies, and private financing. This can take the form of communal loans, shared purchases, or other forms of financial assistance. The Israeli government provides various subsidies and incentives to encourage affordable housing, including grants, low-interest loans, and tax incentives. Haredi communities are eligible for these programs and can use them to offset the costs of purchasing homes. Haredi individuals may also turn to private financing options such as mortgage loans, personal loans, or lines of credit to purchase homes. In many cases, these loans are secured by the community or by a religious organization, which helps to reduce the risk for the lender.

Enclaves are characterized by a constant tension between isolation and openness, exclusion and inclusion. As Tipple (2000) suggests, the built environment affects this tension on various scales according to its accessibility, location, and morphology. Specifically, changes occur in places that allow for easy access and expansion, such as the ground floor, which can be extended to into the yard, and the upper floors, which can be expanded on the roof. This tension helps account for the frequent changes in the boundaries of the enclave, which shapes the physical characteristics of the community and enables the development of a visual language that defines and distinguishes Haredi communities from "others". In this context, whereas the urban planning system aims to meet public needs, the Halachic planning system is the spatial expression of Halachic law. To reduce conflicts between the scriptures, yeshiva codes and modern life, Haredi members are encouraged to define an ideological space that creates an "atmosphere of holiness" while separating the younger

generation from external influences (Taragin-Zeller 2014). Thus, closing roads to vehicular traffic on the Sabbath prevents "polluted" people and objects from entering the purity space. To comply with the prohibition against using elevators on the Sabbath, residential areas feature buildings up to six stories high. Orientation of the windows prevents views from windows facing one another or from the street, and there is a requirement for a Sukkah balcony (Churchman and Frenkel, 1992). Cultural parochialism is also reflected in distinctive clothing and public social behaviour (Shilhav, 2007).

Urban Chaos in Jerusalem: The case of Illegal Construction

The Israeli planning law (1965) differentiates between legal (licensed and permitted) and illegal (unlicensed) construction. To receive a building permit, projects must meet certain standards and obtain appropriate permits, for which the property owner is responsible. Illegal construction, therefore, occurs when a property owner uses their land or building in a manner inconsistent with the zoning laws or regulations and can pose a safety risk to residents and the surrounding community. Illegal construction may also lead to penalties and legal procedures, including fines, structure demolition, or other consequences. In the case of illegal construction, demolition is one of the most controversial of all practices.

To facilitate fast and efficient demolition of illegal structures, amendment 116 expanded the authority of local committees to issue demolition orders. These administrative demolition orders must comply with precise demanding procedures. Noam (pseudonym) from the Jerusalem municipality's Department of Construction Supervision, notes that violations can be dealt with more effectively and at a lower cost when they are handled early (14 Dec 2022):

> "Apartments splitting, illegal use, closing balconies, and minor construction violations concerning sheds are the most common. The municipality only issues demolition orders if building permits under current urban plans cannot be obtained, even retroactively."

The national enforcement unit's guidelines state that an administrative demolition order is intended to "stop and cancel" construction violations rapidly, according to the explanatory notes to sections 206 to 208 of the Planning and Construction Law proposal (Amendment No. 109, 2016). This measure is effective because executing the orders and demolishing the construction requires relatively few steps at this point, the builder suffers the least damage, and the damage to the environment and infringement to the rule of law is minimal. According to this directive, compliance with administrative orders requires the proactive detection of construction violations by local committees. When a demolition order has been issued the committee must carry out the demolition itself rapidly, which requires advance preparation. An identical procedure applies throughout the city.

In the context of the Haredi enclaves, it is often argued that illegal construction is the result of the high demand for housing and a lack of available land in these densely populated areas (XX). Some acknowledge that illegal construction negatively impacts the daily lives of residents. According to Oxman and Carmon (1989), ownership of an apartment has the greatest impact on the transformation of a structure. As well as meeting an immediate need, the additions to these buildings serve as a foundation for future expansion within the limits of local law. The high demand raises the prices of apartments in the inner-city Haredi cores and creates a building crush, sometimes through the extreme but common solution of splitting residential units and converting storerooms and parking lots into residential apartments (Zicherman 2016). It is estimated that thousands of anomalies go unreported. Certain local politicians nevertheless turn a blind eye to illegal construction or enable them often by using tactics to thwart the municipality's enforcement efforts. Shilhav (1998;127) argues that the role of local religious leaders in politics is to divert resources to their sector: “Haredim adopt modes of operation and rules of the game that are quasi-universal, but their real and important aims remain, for the time being, particularistic”. Alfasi (2006) describes the spatial implementation of this agenda and explains that Haredi neighbourhoods in Jerusalem exemplify the worldwide phenomenon of "authorized" illegal building. Almost half of the city council’s members are of Haredi which has impacted its

power relations, values, and interests. The study of unauthorized building in Haredi neighbourhoods of Jerusalem can thus provide insights into the effects of chaotic spaces on urban life.

Methodology

To analyse the dynamic of chaos in city spaces, particularly illegal constructions, we analysed several types of data: detailed residential patterns in target zones, spatial preferences, individual strategies, and government policies. Throughout 2008, extensive field surveys were conducted in the Ramat Shlomo and Sanhedria neighbourhoods to characterize the residential patterns of Haredi households. Six Haredi interviewers, familiar with the Haredi communal structure, went door to door to conduct structured interviews. The interviewers were able to reach nearly all households (97%) in both neighbourhoods. These survey data were then used to classify every household in Ramat Shlomo and Sanhedria into subgroups, and trace back the ownership or rental history of the majority of the apartments. Although these data are not new, they were useful in differentiating between neighbourhood groups. Similar to previous studies (Waterman and Kosmin, 1986; Friedman, 1991), it was assumed that residential patterns were fairly stable. These stable patterns stem from the importance Haredi attributed to their neighbours' identities which resulted in a relatively low turnover rate among residents.

In addition, and for this study, in-depth open interviews were conducted with planners (2) and residents of Ramat Shlomo (11) and Sanhedria (7) about residential choices, dynamics and patterns. Transcripts were later analysed using ATLAS.ti, indicated that neither the residential patterns within the sub-neighbourhood nor the distribution patterns of different groups (Lithuanians, Hasidic, etc.) have changed. In Ramat Shlomo, this tendency is strengthened as a result of the continuous and direct involvement of the community leaders in the housing dynamics and the extreme social structure that sustains so few transactions and "frozen" real estate markets.

Finally, we obtained detailed information from Jerusalem Municipality on types of building violations at the individual apartment level, the way these violations were processed, and the authority in charge for 2010-2023.

A comparison of the 2008 data to the municipality's 2023 data suggests that the housing situation for Sanhedria's 115 buildings has not changed much. According to 2008 data, these Sanhedria consisted of 67 institutions, 869 residential apartments and 40 mixed-use structures. According to 2023 data, Sanhedria's buildings include 27 institutions. The other buildings house 87 additional institutions, 876 residential apartments, and 40 daycare facilities combined with residences. 2008 data indicated that Ramat Shlomo's 263 buildings house 2,259 apartments and 180 institutions. Of these, 63 institutions are in specially allocated buildings, and 117 operate from residential buildings. Based on the municipality's data, Ramat Shlomo will have an additional 327 housing units by early 2023.

The survey data were merged with aerial photographs and a geographic database provided by the Jerusalem municipality (updated to 2023). Based on the typical residential patterns for each subgroup identified in the 2008 survey and data from the Jerusalem Municipality on illegal construction, we generated high-resolution maps of the anomalies, and compared them, to produce a comprehensive picture of the illegal construction typologies in Sanhedria and Ramat Shlomo.

In terms of its limitations, the research relied on residential dynamics described in a survey conducted in these neighbourhoods in 2008, which referred to processes that began in the mid-1990s. While there is no documentation about the period from 2008 to the present, studies indicate that Haredi families are characterised by low residential dynamics (Waterman and Kosmin, 1986; Friedman, 1991). We confirmed the assumptions regarding low residential dynamics within the community enclaves among the populations studied via the interviews described above. We estimate that combining these limitations with the opportunities created by referring to the municipality's database allowed for an in-depth analysis of informal development while complying with GDPR.

Chaos Observed: The Haredi neighbourhoods of Sanhedria and Ramat Shlomo

Economics, religion and cultural imperatives

For the study of the perpetual state of urban chaos, we focused on two Haredi neighbourhoods of Sanhedria and Ramat Shlomo. These neighbourhoods are located in the northeastern part of Jerusalem, within a larger Haredi enclave. Sanhedria, like many inner-city neighbourhoods, was populated over time. Sanhedria had been a frontier settlement during the 1967 war, but after the war, it became an inner-city neighbourhood. It gradually changed from a mixed neighbourhood populated by secular, religious, and Haredi residents to a Haredi neighbourhood in 1995, and from a primarily native-born neighbourhood to a quarter of foreign-born residents. There is a seemingly unified market for housing in Sanhedria, where all subgroups have the opportunity to buy and rent apartments. The central location, the diversity of institutions in the neighbourhood, and the SES of residents all contribute to its high rents and prices.

In the mid-1990s, the local authorities and state governments allocated land from Shuafat, an Arab village nearby, to Ramat Shlomo, the first of a series of suburban neighbourhoods for Haredi residents. It was designed for young families with large average households of nine people (Hershkovitch, 2001). In 2017, Ramat Shlomo had approximately 16,736 residents. As originally planned, the neighbourhood remains divided into several extremely segregated sections populated by different Haredi groups. Increasing housing demand in the area has caused Ramat Shlomo to grow rapidly. This growth has resulted in increased demand for public services and infrastructure, which has sometimes strained existing resources. Each group living in Sanhedria and Ramat Shlomo can be classified according to its affiliation with one of three main Haredi streams: Lithuanians, Hasidim, or Sephardim (Shilhav 1998). The majority of the Haredi residents of Sanhedria and Ramat Shlomo are from the groups that traditionally populated Jerusalem: Lithuanians, Hasidim, and Sephardim, as well as Lithuanian newcomers. Ramat Shlomo also includes Chabad, Neturei Karta, and Sephardim. As a group, Lithuanians are considered to be the elite of the Haredi community with regard to studious piety. Although they have their differences,

Lithuanians usually set the norms for Haredi society and view religious studies as the core value of an individual's life (Etkes, 2018). As part of the Lithuanian stream, which is found throughout the world, the Haredim of Jerusalem distinguish between foreign and Israeli Lithuanians. A Lithuanian subgroup can be affiliated with a particular rabbi (religious leader) or yeshiva. In the Hasidic groups, individuals live around the 'court' of the Admor (religious leader), who takes on both a religious and active leadership role (Green, 2001). Hasidim maintains social relationships, including marriage, within a specific court (Ben Sasson, 1987). The term Sephardim, in general, refers to a religious continuum that includes Jewish descendants from Islamic countries as well as those from the Old City of Jerusalem and those who speak Ladino. In this study, the term Sephardi (singular) or Sephardim (plural) refers solely to those who keep the Haredi lifestyle. Secular and conservative Sephardim often belong to the National Religious movement, and adhere to a non-Haredi, modern, pro-Zionist form of religiosity. According to the 2008 data, most residents owned their apartments (96% in Ramat Shlomo and 68% in Sanhedria).

The cycle of informal development

Informal construction in urban areas can stem from communities' specific demands, particularly those with religious or cultural priorities. In the case of Jerusalem's Haredi community, the need for affordable housing for large families often leads to the practice of illegal building. Bat-El (pseudonym), resident of Sanhedria, explains that numerous Haredi families with many children have no alternative but to add illegal extensions to their housing units:

> "Poor Haredi people with large families cannot afford to approach the municipal authorities for a permit to build or expand their homes. They have no choice but to build illegally, so they run the risk of being caught by municipal inspectors." (21 Dec 2022).

Despite this, Figure 1 reveals that the poverty of large families, cited as justification for illegal construction, is not entirely true, since urban haredi neighbourhoods are often more economically distressed than suburban neighbourhoods.

Insert Figure 1 about here.

Noam (pseudonym) suggests that in addition to housing solutions, pursuing sectoral profit plays an equally important role in illegal construction:

> "The high demand for housing in Haredi areas of Jerusalem, combined with limited land availability can create financial incentives for developers to engage in illegal construction in order to maximize profits. Sectoral profit can take the form of building a public institution used by a specific community, such as a kindergarten in a bomb shelter or on a balcony" (14 Dec 2022).

Thus, although poor Haredi people may make minor amendments to existing legal structures for economic reasons, illegal construction cannot be classified as purely economic in the traditional sense.

Data from municipal sources indicate there are 693 documented cases of illegal construction in Sanhedria and Ramat Shlomo (March 2023). Figure 2 shows the spatial distribution of illegal construction in the two neighbourhoods.

Insert Figure 2 about here.

Laura (pseudonym), the local urban planner explains the nature and number of illegal constructions in the neighbourhood (1 May 2023):

> “In the Sanhedria there are relatively few violations, which stem mainly from spatial constraints and ignorance of the licensing process. Along Shaul Hamelech and Rabbi Beloy Rds, we can see small half-floor residential units. Violations related to balconies often result from a lack of information about the law and the permit process. In

addition, they result from a low digital orientation. It should be explained, for example, that constructor approval means safety. The visibility of public space, related for example to the facades of the buildings, is less of a priority than a sukkah balcony for each apartment."

According to 2023 data, of the 115 buildings in Sanhedria, 262 construction violations reported, which corresponds to 2.27 violations per building. In 41% of the illegal constructions, this involved new additions or an extension to an existing building. Only 16% of the cases involved additional constructions for apartments. In 8% of illegal constructions involving new additions a demolition order and/or misuse violation were issued. These illegal constructions involved a balcony in 6% of cases, so an inspection can typically be launched. A total of 5% of the cases concerned the construction of storerooms, which could be converted into illegal residences. These violations also start with an inspection. City data indicate that 4% of the violations involve changes to existing buildings, resulting in demolition orders and indictments. There are only a few cases involving the illegal installation of elevators, bomb shelters, illegal demolitions, or unit splitting.

Lia (pseudonym), the local urban planner describes the construction violations in the neighbourhood (17 April 2023):

"Ramat Shlomo was designed in a flexible manner with future expansion built into the A-C statutory plans in accordance with the local terrain and topography. In spite of this, many exceptions are made by digging into the mountainside. The number of unreported residential units is estimated to be over a thousand."

However, only 431 construction violations were reported for 2023, at a ratio of 1.63 violations per building. In 52% of illegal construction cases, additional construction or an extension to an existing building was involved. The report indicates that 24% of the illegal constructions involved new constructions, where a demolition order and/or misuse were

issued. The illegal construction involved a balcony (3% of the cases) or elevators (another 3% of cases), prompting an inspection. A total of 5% of the cases concern excavation and filling, also prompting an inspection. Only a few cases were reported for an illegal temporary structure, the closing of a balcony or the misuse of a residence as a public institution.

Spatial distribution of illegal constructions in the two neighbourhoods

In Figure 2a the green and blue lines illustrate new initiatives in Sanhedria, along Bar Ilan, the main thoroughfare and on the side streets. Private apartment and building initiatives constitute the response to the municipality's unwillingness to engage in comprehensive planning in this neighbourhood which would produce a real urban transformation. The comprehensive planning process can, however, make it hard for politicians from certain groups to respond to their communities' demands and refer to this "grey enforcement space" as an invitation to violate building regulations. Also, the absence of politicians' ability to reduce enforcement in the neighbourhood where most Haredi institutions are concentrated could damage their reputation as having influence and reduce the community's status. In Ramat Shlomo (Figure 2b), on the other hand, comprehensive planning is taking place as a result of the consolidation of rights at the level of complexes and building blocks. Although the city building plan is new, the building rights are old, leading to densification without the need for demolition. However, even though the new city building plan for the neighbourhood has been approved, many private and specific initiatives are emerging. In these group initiatives, single rights are transferred to thousands of apartment residents. Thus, due to new constructions, in the land divisions of large buildings and complexes, Ramat Shlomo's construction profile has changed. Figure 3 shows the extent and nature of illegal constructions in Ramat Shlomo and Sanhedria, and sheds light on the ways in which individual and group initiatives create spatial patterns within these neighbourhoods.

Insert Figure 3 about here.

In both neighbourhoods, while private illegal construction initiatives along the main axes (in orange) are hard to see, the public illegal constructions are more visible. The illegal public construction initiatives in Sanhedria's synagogues are particularly obvious since they extend from the lot to the main road in such a way that they block the sidewalk (see pictures 1 a-b). Illegal constructions on the side streets are also characterized by their physical prominence in the vertical dimension of the buildings. In Figure 3, the green polygons depict areas characterized by apartment splitting and misuse of residential apartments (see photos 2 a-c). Illegal constructions such as these serve as kindergartens, synagogues, or health care branches. The yellow polygons mark other major illegal constructions, including the closing of balconies to convert them into rooms or apartments, additions to apartments, the conversion of storerooms and parking lots into apartments, and the use of underground spaces formed by the original topography for small apartments (pictures 3a-b).

When comparing the allocations of the sub-areas in Ramat Shlomo (figure 4) with construction violations data, it is evident that most apartment splitting, and illegal uses occur in the Chabad and Neturei Karta areas (in yellow). In the Lithuanian-Spharadim sub-area, additional such violations occur, but less so among Lithuanians. Other construction violations are more common among the Neturei Kartas and Hasidim, and less prevalent among those who identify as National Religious and Spharadim.

Figure 4 about here.

"When the Centre Cannot Hold": Haredi enclaves and the municipal policy

Illegal constructions in Haredi neighbourhoods in Jerusalem can be viewed as chaotic spaces, with special dynamic of chaos and hierarchical layers that are partially related to existing structures. Abraham (pseudonym) explains how individual decisions shape the space (6 Dec. 2022):

When our children and grandchildren get married, we need apartments for them. Last month, when we were looking for an apartment for our granddaughter, we found

> apartments with anomalies, but that did not lower the asking price. It was important for us to find an apartment with potential for expansion, so that we could add another balcony in the future, for example. As a result of our demographics and marriage circumstances, everybody talks about apartments, and everyone is always looking for a connection for the best deal. There are no realtors here. Everything is done by word of mouth, and everyone knows what can be added to each apartment, how the municipality will react, and how the neighbours will react.

As Abraham noted, people recognize patterns of "agreed upon" illegal construction, react to them, obey the religious and cultural local-communal norms, and build illegal additions as a function of their personal needs. In accordance with Selfridge (1959), the architecture of illegal constructions is composed of different groups of private and collective initiatives, acting independently. These create a kind of language or internal order, sending signals to each other that respond to social norms and practical needs which in turn shapes the physical Haredi spaces. Thus, even though people perceive the pattern of illegal construction, they do not recognize the pattern as a whole or its urban impact on community spaces. Abraham's statements indicate that people think about the extent of "reasonable deviations" from the building code when predicting a property's expansion potential.

Informal development patterns in these neighbourhoods follow previous studies that indicate that patterns are perceived in terms of their parts before being seen (Grainger, Rey et al. 2008). Noam (pseudonym) of the Department of Construction Supervision suggests that despite these overburdened urban infrastructures, the municipal authority handles violations through whistleblowing, which remains particularly infrequent in the Haredi population). An anonymous complaints department was established in recent years at the municipality to allow residents to submit complaints, which are handled immediately, with no identification. According to the building inspector's unit at the Jerusalem municipality, a uniform policy applies to all inquiries, and similar administrative orders for demolitions are issued throughout the city. To ease the burden on the legal department, which in fact closes

cases due to lack of public interest, certain building violations which require the consent of 75% of the neighbours and which do not exceed the building line exempted. These include building a pergola, making an exit door for a backyard, or closing sunken balconies uniformly throughout the building. It is assumed that people do not commit building violations unless they genuinely need to. The municipality thus only responds to real needs, such as elevators which are provided by the Comprehensive plan or Sukkah balconies which are addressed by the 'Shadow' plan. These plans retroactively approve illegal balconies built to meet families' need for additional space in the apartment and ease the housing density.

Inspectors do not enter private yards or search for illegal constructions on their own initiative. Unless they cross-check the data with the licensing, which is not their job, they cannot tell from a site visit whether the case in point is an illegal construction. Aerial photos are sometimes used to locate construction violations. Since they are more difficult to detect in built-up areas, in the inner city, the issue tends to be neglected. Most efforts are concentrated on new neighbourhoods, where illegal constructions are hunted down and prosecuted. However, few actual demolitions occur in new neighbourhoods, mainly as a warning to others. Various types of construction violations can result in an administrative demolition order including constructing outside the building lines, adding a floor, turning a parking lot into a residence (especially commonplace among Haredi, who do not own cars), adding rooms, splitting apartments, raising tiled roofs, building utility rooms, and turning them to apartments, appropriating public space for private use, etc. Thus, having responsibility for a specific postcode area while being overloaded with work at the level of an individual unit, prevents enforcement personnel from understanding the implication of Informal development for the urban landscape and reflecting it to policymakers.

The studied neighbourhoods, Sanhedria that developed organically, and Ramat Shlomo which was established in one fell swoop because of top-down government initiative, provide us with a unique opportunity to reveal how informal development is driven by the religious and cultural imperatives. In line with Huchingson`s (2010) analogy, we can trace the learning mechanism that operates similarly to other neural network systems, to maintain

and support informal development. Haredi Jerusalemites have capitalized on municipal politics for the building and funding of sectoral institutions, but have overlooked factors which, in recent years, have become the two cardinal reasons for today's urban chaos that is a result of constant illegal building. The first is that illegal Haredi construction enjoys the political and economic backing of the municipality and therefore stands as constant chaos that is acceptable by city municipality. The second is the lucrative profits accrued to those who build illegally. Accumulated individual preferences frustrate the overall general plan more than group behaviour. As the neighbourhood grows, its demography also causes the segregation patterns to become fixed: more people are aggregated in larger patterns.

Conclusion

This article dealt with urban chaos and its effect on city spaces. Our assumption was that when chaos is introduced all city agents will work together to diminish or at least minimise it. However, we discovered new relations between the social structure and the perpetuation of the constant chaos of the Haredi urban enclaves, where the absence of order and regulation in the built environment is deliberately maintained, supported, and embraced by community members, entrepreneurs and municipal agents alike, in an attempt to uphold the existing status quo within the city. The neighbourhoods studied, Sanhedria and Ramat Shlomo, provide evidence that illegal construction is not predominantly motivated by economic, family, or religious factors. Instead, it is intricately linked to the perpetuation of urban chaos. Consequently, rather than being perceived as a problem to be solved or an obstacle to be eliminated, constant chaotic urban spaces are embraced as desirable patterns that must be preserved to sustain the intricacies and delicate networks of urban life.

In Sanhedria, private initiatives at the apartment and building levels rebut the municipality's unwillingness to promote comprehensive planning in this area. This is because urban transformation is the product of numerous individual initiatives. In Ramat Shlomo, comprehensive planning takes place through the consolidation of rights at the level of complexes and building blocks. Although Ramat Shlomo was built and tailored for the Haredi

population, the percentage of violations is still very high. Although the plan is updated, the building rights are old, leading to densification without the need for demolition. However, even though the new plan for the neighbourhood was approved, many private and specific initiatives have emerged in group initiatives, where rights are transferred to thousands of apartment residents. Thus, new constructions of large buildings and complexes have altered Ramat Shlomo's construction profile. In both neighbourhoods, the population invests heavily in illegal construction which maintains permanent urban chaotic spaces. This structural process is produced by different groups, representing private and collective initiatives that act independently. As individual cases of roofs, sheds and parking lots become illegal residences, balconies added to facades to become rooms, and stairways become storage rooms for carts accumulate, thwarting patterns emerge. Residents can identify patterns of "agreed upon" illegal constructions, react to them, obey local-communal norms, and engage in their own illegal construction according to their personal needs. This creates a kind of language or internal order that "sends signals to each other" and responds to social norms and practical needs which in turn shapes the physical Haredi environment. These planning violations result in a chaotic space that is tolerated and maintained by the parties as a mutually beneficial arrangement.

The analysis conducted in this study suggests that illegal construction is not only a sporadic occurrence but a continuous and generative process that establishes a unique space. This space seeks to uphold a state of chaos—a distinct communal grey area with its own language and regulations—that is recognized and embraced by both residents and the broader population. We have coined the term 'constant urban chaos' to characterize this space as both the source and the desired outcome. These spaces of chaos reveal how neighbourhoods are shaped by individual and collective initiatives to preserve the communal ways of life through spatial patterns.

The Haredi community uses this chaotic space to meet its growing housing needs and compete over spatial dominance. While entrepreneurs benefit from the grey space that gives them freedom of action, residents seek certainty to know where to buy or rent, what

will be built where, and that their views will not be blocked. However, despite the awareness of the impact of illegal construction on community spaces, individuals are less conscious of the overall resulting urban pattern. Individuals take what constitutes a ‘reasonable’ amount of illegality into consideration when engaging in building violations. These individual decisions thus frustrate the official plan, sometimes even more than group behaviour. The authority, on the other hand, plays on the conflicting interests to help strengthen Haredi communities' representation in the municipality and preserve the status quo between the communities. Haredi leaders have capitalized on municipal politics to obtain derogations to build and fund sectoral institutions, and city council members support the process by turning a blind eye to construction violations. The municipality may find it to its advantage to support enclaves since if Haredi are grouped into a defined area, it may free up other areas thus reducing tensions between groups. However, defining an enclave through illegal construction has inherent risks for which the regulator is responsible.

In addition to documenting the impact of poverty and cultural preferences, the findings suggested that constructing illegally can be extremely profitable for some city agents and citizens. An initiative to build public buildings for a particular stream, such as synagogues and yeshivas, contributes to greater community density and supports welfare and educational activities by attracting more users and increasing the power of its leadership and relative influence on the Haredi community. Thus, a public initiative can increase competition and prompt other streams to build illegally. Admittedly, mixed uses in urban areas are appropriate, and many times planning is required to promote this trend, but the Haredi case illuminates that when mixed uses are naturally integrated, regulation is required regarding the location, the nature of the uses, the way they are combined and their amount. Since the neighbourhood is growing rapidly, demography also helps rigidify segregation patterns where more people are aggregated in larger chaotic patterns.

By applying the notion of "constant urban chaos" in Jerusalem’s outskirts and inner neighbourhoods, this study contributes to the debate on the production and dynamics of chaotic spaces and how the cycle of chaos impacts communities. This paper addresses

planning issues while awaiting the consequences of the expected reforms to the legal system and the planning system. According to administrative Israeli law, for a court to intervene in a decision made by a planning and building committee, there must be a reason, such as the absence of authority to make a specific decision, a flaw in the procedure (for example, approving a plan without first making it public to allow for objections) or if the court feels that the decision deviates significantly from reasonableness. In the Haredi case, the change in space is a result of the actions of three parties: the rabbinical establishment, the municipality, and the residents themselves. These factors work together to transform the space through the urban planning system, a formal institution, the Halacha-based planning system, which can be defined as an alternative institution, and the residents' informal civic initiatives. These systems work in conflict, parallel, or cooperation. As in Jerusalem, when the mayorship and some components of the municipal management mechanism are under Haredi's control, their functions overlap. These planning violations create a chaotic space that is tolerated and maintained by these three parties. Nevertheless, further research is needed to assess the existence of illegal construction based on the chaotic pattern, understand how this order functions alongside formal urban spaces and shed light on how chaos can be used as a bottom-up urban tool to benefit communities.

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Interviews

Bat-El (pseudonym. F, 41), a resident of Sanhedria since 1999 (member of the Lithuanian Haredi sect, 21 Dec. 2022).

Abraham (pseudonym. M, 53), a Resident of Ramat Shlomo since 1995 (member of the Chabad Haredi sect, 6 Dec. 2022).

Noam (pseudonym), the Department of Construction Supervision (interviewed 14 Dec 2022).

Laura (pseudonym), a local urban planner for Sanedria region (interviewed on 1 May 2023).

Lia (pseudonym), a local urban planner for Ramat Shlomo region (interviewed 17 April 2023).

Please note that in order to maintain their relationship with the populations they serve, the planners' names appear anonymously. Names of residents interviewed remain anonymous to maintain uniformity. The authors of the article are aware of the identities of the interviewees.