

Violence and the Deformation of the Urban Form in Iraqi cities

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Abstract

This study explores the impacts of violence on the urban deformation of Iraqi cities as a result of conflicts and political violence, focusing on the case study of Al-Aziziah in Ramadi. The study hypothesized that the transformation and distortion in the urban form of the Iraqi cities neighborhoods were due to the political instability following the invasion of 2003. The main questions of the research are: (1) What is the impact of the militarization of urban space on the urban form? (2) Could the use of spatial analysis theories be useful to test the impact of terrorism on urban change? To answer these questions, this research adopts three theories of urban spatial design (figure-ground, linkage, and place theories) within a mixed-methods approach include qualitative and quantitative methods to analyze shifts in urban morphology and their relationship to violence. The research revealed that there were significant changes affecting the elements of urban morphology in Al-Aziziah, which caused an urban disorder due to the abnormal obstruction in the urban extension of the neighborhoods. The outcome of the study suggests recommendations and guidelines for planners and decision makers in order to formulate new strategies to reduce the impact of warfare on the urban form. The results establish a cornerstone for further post conflict urban studies on other Iraqi cities. The major challenge and limitation of the research was the unstable security circumstances in the city, which made taking pictures, recording videos, and conducting interviews taboo and difficult.

Keywords: Urban form, Violence, Iraq, Place theory, Linkage theory, Figure-ground theory

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1. Introduction

Violence destroys human lives, social systems, buildings, and infrastructure (Lawson & King, 2012). Various forms of urban violence comprise a major challenge facing governments and decision-makers worldwide. Sociologists define urban violence based on human nature, social hierarchy, and history, and it relates to the complex interconnected factors of modern industrial production and urbanization, access to resources, and socio-cultural identities and ideologies. The most fundamental underlying factor in urban violence is population growth in cities, which as a general phenomenon of urbanization is commensurate with economic and social development, but which leads to concentrations of disaffected and potentially violent individuals during adverse periods of economic stagnation and unemployment. In general, poverty rates continue to remain relatively high or to increase in many places worldwide, with social and economic disparities exacerbating inequality, exclusion, and injustice. In certain circumstances, some cities have degenerated into so-called “no-go zones,” trapping the poorest people or those with no political or social influence within a particular area and therefore undermining public governance and draining the cities resources (World Bank, 2010). Violence deters investment and stigmatizes neighbourhoods. It weakens social cohesion. It limits educational opportunities, investment in human capital, the emergence of small and medium-sized businesses. In return people tend to socializing and psychological solidarity with each other for fear of being harmed. Generally, urban violence diminishes urban governance. It is evidently that violence affects areas with high levels of poverty rather than affluent areas. (Simpson, 1993; World Bank, 2010).

In The Politics of Collective Violence, Charles Tilly (2003) stated that there are pivotal factors in the escalation of violence from an individual crime to a collective phenomenon. He defined collective violence very broadly, as a social interaction between two or more individuals seeking to harm others for psychological, physical, or social purposes. He used the term “politics” to denote the strategies and activities used by social groups to achieve political goals and gains providing a dynamic view of the mechanics of the relationships and social ties that appear between different groups. He linked political objectives to socio-cultural identity, which combine to precipitate a series of undesirable interactions leading to violence. He also determined that the pace of violence depends on the general interaction between the conflicting parties and the degree of co-ordination between these parties. He identified six types of collective violence: violent rituals, coordinated destruction, opportunism, brawls, scattered attacks, and broken negotiations. According to the WHO (2002), collective violence refers to the violence committed by a group of individuals or state against another group or state, aimed to control, impose, and seize natural and human resources. In this sense, the definition of the WHO came coherence with Tilly’s notion of collective violence. This understanding of collective violence treats it as an existential phenomenon with a political dimension, but urban violence can also be conceptualized as a form of political violence per se (Mider, 2014). Tilly’s (2003) classification of collective violence considered

violence to be political in relation to the extent of co-ordination among violent actors, and the severity of damage inflicted (i.e., sporadic and low-intensity urban violence is more associated with individual or uncoordinated acts of violence than organized political campaigns of violence). Political violence differs from the generic concept of violence in terms of perpetrators and victims being explicitly identified with state and non-state entities; political motives, such as access to or control of resources and political access to power (Porta, 1995); and the use of guerrilla warfare as an instrument of violence supported by political factions. WHO (2002) defined political violence as “an episodic interaction between social identity groups engaged in an on-going, iterative (i.e., processual) relationship in which instrumental force is used and results in death and/or injury to humans or destruction of urban areas.”

In the aftermath of the 2003 US-led invasion and occupation of Iraq, the collapse of the central state led to the country degenerating into spheres of primordial ethno-sectarian influence (Kurdish, Arab-Shia, and Arab-Sunni), supported by foreign regional and global powers. Districts within cities came to be controlled by competing armed militias and terrorist groups, resulting in on-going violence in city centres, undermining national socio-economic development and security. The most egregious example of this was the ISIS insurgency and the Fall of Mosul in 2014. According to the Iraqi government, the violence between 2012-2017 will cost approximately USD 88 billion, particularly to rebuild Iraqi cities that have encountered destructive violence, such as Mosul, Ramadi, and Tikrit. This cost is equivalent to the annual budget of the Iraqi state, in addition to the social consequences such as clan conflicts, violations of law, and social corruption. Chronic violence affects relationships and social networks in ways that can destroy bridges of confidence between individuals and groups. Subsequently, this creates a sort of hostile atmosphere of fear and mistrust and in some further cases, fuels more violence (BBC News, 2015; Simpson, 1993). It also establishes non-state groups, such as insurgents, tribal leaders, and militias, who acted as ‘stumbling rocks’ (Green & Ward, 2009). Ramadi was one of the cities that endured a large amount of violence because of its opposition to the new state, and its strategic location made it suitable for armed groups. Ramadi became the ‘triangle of violence in Iraq’ (O’Hanlon & Campbell, 2008). Data obtained from international organizations documents such as WHO, UNDP, and IBC indicated that the civilian fatalities increased between 2003-2017. These organizations estimate that 80% of the city suffered physical damage of infrastructure, houses, schools...etc. The international reports also described the reality of Ramadi’s security situation as on-going and long-term violence, undermining the national economy (O’Hanlon & Campbell, 2008; Iraq Body Count, 2017).

This study highlights the transformations of the urban form in Iraq with regard to the adverse impacts of unregulated urban expansion and political upheaval. Urban form, in this study, refers to the components arranged in a specific space. It also refers to the spatial structure of human and natural activities or the physical structure of urban space. It can be defined depending on the field of study, such as architecture, urban planning and geography (Sharma, 2014).

These changes in the urban form were fundamentally driven by mass migration toward major cities

and urban centres in response to insecurity in peripheries, thereby intensifying urban population growth and increasing pressure on scarce urban resources. The lack of a realistic and practical master plan responding to the contemporary demands of Iraqis, including most fundamentally protection from violence, along with policies to stop political violence means that there is no realistic prospect of preventing the on-going deterioration of urban conditions. Over the long term there is a need to expand the economic, social, and industrial development of Iraqi cities.

The main goal of this study is to examine the impact of political unrest on Ramadi urban transformation after the invasion of Iraq in 2003. It aims to determine the dynamics and characteristics of urban change after 2003 by reviewing and assessing the governmental urban planning policy during the examined period. The outcome of the study suggests recommendations and guidelines for planners and decision makers in order to formulate new strategies to reduce the impact of warfare insecurity on the urban form. In order to achieve the objectives of the study, the following questions are addressed:

- 1.1 What is the impact of the militarization of urban space on the urban form?
- 1.2 Could the use of spatial analysis theories be useful to test the impact of terrorism on urban change?

2. Theory and Methodology

This research adopts three theories of urban spatial design: figure-ground theory (FGT), linkage theory (LT), and place theory (PT). The FGT analyses physical formations in two-dimensions through ground coverage, based on Gestalt theory, concerned with “solid” (figure) and “void” (ground) spaces. This theory aims to analyse the spatial structure of the built environment and to show the relationships between mass and void, to create a sense of spatial awareness (Schubert, 2005; Trancik, 1986). Fumihiko Maki (1964) defined the LT as “the glue of the city” or “the city spine”. Its function is to connect the urban components and to make integration between the spatial system activities. In accordance with this system, the city functions are working in harmony to serve each other. LT attempts to explain how the city masses and spaces are connected. It analyses the system of spatial connection between city parts. It reveals the spatial relationships between linkages and other urban elements such as streets, pedestrians, paths and open spaces. LT refers to the hierarchy system of the built environment ranging from individual structure to the spatial structure. According to Roger (1986) the components of LT are: compositional forms, mega forms, and group forms. It is complementary to the FGT, because it analyses the organisation pattern (Schubert, 2005; Gauthier & Gilliland, 2006).

Finally, PT is concerned with studying the social, economic and cultural factors of city dwellings through three main principals: identity, which represents the meaning of urban areas in the human mind; legibility, which is a distinctly mental image that express place; and image ability, which is how people test their place with its physical and spatial structure (Schubert, 2005; Gauthier & Gilliland, 2006; Trancik,

1986). In this research we discuss the application of Lynch’s theories and practice ideas to understand the urban morphology and transformation of Al-Aziziah because Lynch’s theory of Imageability pays significant attention to the urban physical and behavioural environment. It emphasizes on the reciprocity of city morphology and urban habitats in shaping the interaction between humans and the importance of considering both as the basis for urban design. This emphasis on human experience, social experience, and perception was also one reason for understanding the built environment of the city. In short, this article employs Lynch’s theory of Imageability that put emphasis on the component of ‘identity’ and ‘structure’ of the main urban elements : paths, nodes, edges, landmarks and districts (Lynch, 1960; Lynch, 1981;Lynch,1984). Adopting these theories of spatial analysis provides important aspects in terms of urban morphology analysis: solid and void, organisational relationship systems, and urban spaces’ sensitivity and understanding of human needs. This approach offers an integrated understanding of urban morphology in Ramadi.

The research methodology is based on a mixed-method approach, which includes both qualitative and quantitative strands. Descriptive statistics and content analysis were used to analyse the collected data. Data are collected in a sequential exploratory approach. The quantitative data is based on previous studies and comprises data sets derived from official documents and reports of international organizations, satellite images, and maps. Satellite images and maps were used to extract data and get a more precise mapping and classification of the existing urban fabric of the neighbourhood. Urban morphology spatial analysis theories- figure-ground, linkages, and place theories- were used to analyse the identified themes (Creswell, 2014; Trancik, 1986). Qualitative analysis is based on face-to-face questionnaire interviews with randomly 300 samples households and 56 buildings. Only 275 responses were suitable for analysis out of 300 responses. 25 responses were eliminated due to the following reasons: (1) respondents did not answer all questions; (2) respondents left the questionnaire blank; (3) contradictory in respondent's answers that indicate that the respondent did not read all questions before answering, or they answer the questions randomly. Interviews were conducted with (13) stakeholders including officials, decision-makers, architects, and engineers. They are divided into three groups: Four officials and decision-makers who are members of the Ramadi local council in addition to the fundamental design official in the directorate of urban planning; two urban planners are interviewed to discuss the study themes in order to explore the phenomena in-depth; and two architects and five engineers. The study is divided into four main themes, each of which includes several sub-themes as illustrated in Table 1.

Table 1: Qualitative themes

Main Theme	Sub-theme	Research procedure	Objectives
Transformations of urban morphology	Solid and void	Site investigation	Determining the dynamics and characteristics of urban morphology
	Linkages	Site observation	
	Elements of urban space	Interviews	
		FGT	
	LT		
		PT	
Militarization of urban space	Checkpoints	Site observation	Exploring the impact of political violence on
	Concrete masses	Interviews	

Main Theme	Sub-theme	Research procedure	Objectives
Violence phenomena	Barbed wires	Interviews	Ramadi urban form and the reactions of community toward the transformations
	State vs. non-state conflict Guerrilla conflict		
Social behaviour (interactions)	Urban identity	Site observation	
	Imageability	Interviews	
	Legibility	Theory of Imageability	
	Urban community status		

Source: Organized by this research (Authors, 2019)

2.2 Setting the Scene

Ramadi is the capital of Al-Anbar Province, the largest province in Iraq and a strategically important region, with an area of 7,839 km². It occupies much of the country's western territory, and shares borders with Syria, Jordan, and Saudi Arabia. Ramadi is located on the Euphrates River, approximately 90 km from the capital Baghdad. Ramadi's native population is predominantly Arab-Sunni. As the new Iraq state after 2003 was dominated by Arab-Shia sectarians, the area was resistant to the new regime, and was a target for retribution due to being identified with the former regime. Consequently, it became a flashpoint for conflicts between numerous armed parties, and it was known as one of the triangle of violence in Iraq" (Green & Ward, 2009; O'Hanlon & Campbell, 2008). Data obtained from international organisations such as the WHO, UNDP, and IBC indicate that the civilian casualties increased between 2003-2017 (Iraq Body Count, 2017; O'Hanlon & Campbell, 2008). These organisations estimate that 80% of the city suffered physical damage of infrastructure, houses, and schools, etc. Ramadi has long been an extremely dangerous place. International reports also explain the reality of Ramadi's security situation and describe it as suffering from long-term violence. After 2004, Iraq launched a set of spatial planning policies development planning programs (Faihan, 2014). In 2003, the Directorate of Urban Planning in Ramadi made great efforts to reshuffle the strategies of urban development and to update a master plan for the next 25 years. This planning strategy was carried out in order to promote decentralisation of the city, and to expand economic and population activities in the western parts of the city. However, this scheme was never implemented, because the city's outskirts were not safe, especially the western parts (Faihan, 2014; Ramadi Municipality, 2018). Violence targeted the transportation infrastructure; such as bridges on the Euphrates River and highways, therefore the demand for accommodation in the relatively safer city centre increased. There was a commensurate increase in urban density in the city centre, from 3,000-5,000 person/ km² in 2003 to 15,000-18,000 person/ km² in 2017 (Glaeser, 2001). There was significant transformation in the land use. For instance, agricultural or commercial lands were turned into residential. This resulted in the decrease of green areas from (29 km²) before 2003 to (6.8km²) in 2010. Public spaces have been occupied by citizens fleeing the violence (Al-Alwany, 2011; Ramadi municipality, 2018). Table 2 reveals the visible transformation in population growth, total city area, planned and unplanned area and the population density between 2003 and 2017.

Table 2: Population growth and urban changes in Ramadi (2003-2017)

Indicator	2003	2017
Population	193.000	400.000 (estimated)
Population growth	11.9 %	15.5 %
Area of Ramadi city	7.000 km ²	7.000 km ²
Master Plan area	38 km ²	55 km ²
Built-up area	30 km ²	38 km ²
Population density /km ²	3000-5000/ km ²	15000-18000/ km ²

Source: Organized by this research (Authors, 2019)

According to official maps and statistics driven from the Ramadi Local Authority, the American Institute for the Study of War, and UNDP assessment reports, the most violent areas in Ramadi are the western and southern neighbourhoods. Thousands of people were killed and around 80% of the buildings were destroyed as a result of violence in 2003-2017 (Fig.1 & 2). Therefore, this research assesses the impact of reverse local immigration on the urban morphology transformations in Al-Aziziah neighbourhood in downtown Ramadi, indicated by the trapezoidal shape in Figure 1 (Left).

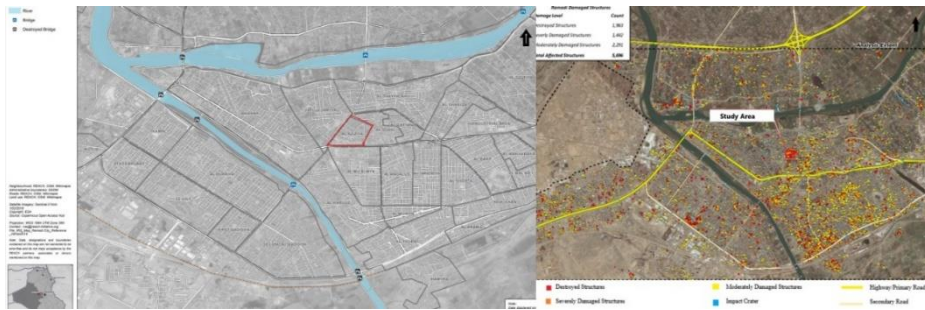


Figure 1: (Left) Al-Aziziah neighbourhood in downtown Ramadi, Source: Reliefweb (2018); (Right) Damage Assessment in Central Ramadi, Al Anbar Province, Iraq (15 Jan 2016), Source: UNOSAT (2021)



Figure 2: Destroyed buildings in Ramadi

Source: BBC News (2015)

Ramadi had witnessed fierce battles between US forces and Iraqi militants. The militants took control of the areas adjacent to military bases, mainly in the city centre. The government centre and the US forces were targeted intensively. Car bombs and explosive devices were used in street battles, in addition to

various missiles. In return, the US forces responded by intense airstrikes and the deployment of patrols to impose control and protect the military bases. The hit-and-run conflict ultimately led to near-entire paralysis of the infrastructure as a result of the inability of public institutions to perform their tasks in light of the on-going battle threats and logistical challenges. According to Ramadi Municipality, noticeable changes to the urban layout of the city as a result of this phase of conflict included:

- (1) Entire destruction of public and private buildings located on the main street along the government centre.
- (2) Disappearance of public spaces and gardens, which were converted into permanent and mobile military checkpoints by conflict parties.
- (3) Arterial transport lines were destroyed, and transportation systems were severely damaged.

After 2003, as a result of continuous violence, demand for housing increased due to internal and external migrations, which significantly affected coverage and voids. The most important factor was the indiscriminate division of land, especially residential land. The coverage rates increased in relatively safe areas, and decreased significantly in areas with high levels of violence. For example, the space of the front garden and the back yard of the residential plots disappeared in sought-after areas with relatively less violence. Conversely, in areas with a high level of violence, void rates increased due to decreased demand due to the lack of security. In addition to the emergence of multi-story apartment blocks in residential areas formerly characterised by family housing, the urban scene became blurred and distracted in terms of normative uses by city dwellers. One and two storey houses thus morphed into building apartments (UN-HABITAT, 2018).

Researchers agree that the impact of armed conflict on land use is diverse and multifarious, but one of the most obvious outcomes is increased density due to more residents living in safer area and fewer living in dangerous ones. The intensity of these densities increases or decreases depending on many incidental factors. One manifestation of land use impacts is the emergence of “random land use subdivisions,” which commonly appeared in times of conflict due to “densities explosions.” Reverse migration from urban to rural areas in search of security highly affects agricultural lands, which then transform into residential or commercial use to meet the growing needs of newcomers. This leads to a change in the environment, threatening the natural balance. Land use is closely related to the transportation system, which is the first target of violence, and its control means the control of the city’s arteries. In conclusion, both the transport system and land use are massively affected by conflict, with profound implications for urban density (Glaeser, 2001).

In the case of land ownership issues, conflicts are usually accompanied by a weak rule of law, and administrative and financial corruption. Under the influences of gangs, lands are exploited and expropriated and are then often used illegally. This leads to the consumption of natural and industrial resources, such as in high-productivity agriculture or in mineral-rich lands. In addition, increased violence results from illegal land appropriation from owners, leading to uncontrolled and illegal changes of spatial

lands systems at the level of the region and the city. Unfortunately, Iraqi cities have been massively affected by such urban deformations.

3. Discussion and Analysis

Al-Aziziah is the earliest constructed neighbourhood in Ramadi. It is located in the city centre close to the river (Fig. 1). This location is appropriate for irrigation, while naturally preventing the risk of flooding. It consists of narrow road networks and alleys that offer privacy and flow for users. Traditionally, each house had a private garden and back yard. The area of each house is about 200-600 square meters. Its solid and void ratio is moderate, with an inter-woven urban fabric. Houses are designed to preserve occupant families' privacy, and to reflect Iraqi-Islamic identity. The most important landmarks of the neighbourhood are the government complex and the Great Mosque. After 2003, the neighbourhood encountered waves of transformations in its urban and architectural characteristics. The most prominent ones were the urban morphology transformations the core point of this research. Al-Aziziah was considered the least damaged neighbourhood compared with other neighbourhoods in the city. Its relative security made it a locus of migration for internally displaced people, migrating from high-violence districts of the city (and surrounding countryside). This in turn, led to rapid transformations in the urban form due to the high demand on housing and services.

3.1 Transformation of Urban Morphology

Al-Aziziah's urban layout was characterized by indeterminate, spontaneous, and informal organic growth. Since 2003 this pattern deteriorated and experienced an accelerated process as a result of the escalation of violence in the city's outskirts and the waves of displacement towards safer neighbourhoods such as Al-Aziziah. The safety of the neighbourhood is due to including the government complex, which entails a robust security presence at all times. The statistical analysis of the demographic data in this research indicates that 32% of current households moved to the neighbourhood 0-5 years ago, and 23.2% 5-10 years ago; consequently, almost 55% of households moved to the neighbourhood following the 2003 invasion (Table 3).

Table 3: Demographic data

No	Variable	Category	Frequency	%
1	Gender	Male	29	51.0
		Female	27	49.0
2	No. of family members	<3	9	16.1
		3-5	29	51.8
		>5	18	32.1
3	No. of families in single house	1	17	30.4
		2-3	29	50.0
		>3	10	19.6
4	Years of residing in neighbourhood	0-5	18	32.1
		5-10	13	23.2

No	Variable	Category	Frequency	%
		10-15	9	16.1
		15-20	7	14.3
		>20	9	14.3
5	House ownership	Ownership	25	44.6
		Rent	13	41.1
		Other	18	14.3
6	Income (IQD)	<500.000	10	17.9
		500.000-1000.000	19	33.9
		1000.000-1.500.000	20	35.7
		>1.500.000	7	12.5
7	House area pre-2003	<200m ²	1	1.8
		200-400m ²	33	58.9
		400-600m ²	13	23.2
	House area post-2003	>600m ²	9	16.1
		<200m ²	28	50.0
8	Nature of employment	200-400m ²	17	30.4
		400-600m ²	8	14.3
		>600m ²	3	5.4
		Public sector	20	35.7
		Private sector	7	12.5
		Entrepreneur	26	46.4
		Student	2	3.6
		Other	1	1.7

Source: Organized by this research (Authors, 2019)

The layout of Al-Aziziah, with its minimal setback areas and lack of available vacant land lots, does not allow inner growth. Illegal changes to increase living space result a multidimensional dynamic urban fabric with high levels of urban congestion. The demographic data of the neighbourhood shows that 51.8% of families have 3-5 members, and almost a third (32.1%) have more than five members. Internally displaced people concentrated closer to their families and relatives in Al-Aziziah cause high demand for new accommodation. Demographic data shows that around 41% of houses are rented, which means that 59% of the displaced people live in the homes of their friends or relatives, or in destroyed or public buildings. For example, before 2003, houses typically consisted of one or two floors with a front garden and back yard, built of concrete bricks with average area of 200m². After 2003, this normative typology totally disappeared due to expansion demands. The gardens and back yards were filled with either new smaller residential units, or additional rooms built from randomly scavenged materials without any formal or coherent architectural design. Less space for gardens and back yards creates an urban fabric without transitional setbacks, which causes lack of privacy. The data clarify that around 50% of the houses are occupied by 2-3 families in each building; 19.6% accommodate more than three families, and less than a third (30%) of houses are occupied by a single family. The housing unit areas have been reduced to 50m² instead of 200m². The selected data reveals the drastic transformation in the houses' floor area after 2003. For example, before 2003, 58.9% of the neighbourhood's inhabitants lived in houses of greater than 200m². Following 2003, more than 50% lived in houses with less than 200 m². Moreover, many of these houses have been transformed into being mixed-used commercial and residential that were neither

planned nor controlled. The FGT shift was then crystalized in a high dense urban fabric with a chaotic skyline and architectural features, as shown in Figure 3.



Figure 3: Ground shifts and height differences in Al-Aziziah

Source: Authors, 2019

This transformation had a negative impact on the infrastructure services of the neighbourhood. According to Trancik's (1986) theory, Al-Aziziah has group and compositional linkages. These were clearly visible in the narrow-curved alleys and cul-de-sacs. Concrete barriers, barbed wire, and the military checkpoints are used to isolate and control the main streets in the neighbourhood, damaging the urban fabric and causing an unhealthy and poor quality environment. This is characterized by stagnant sewer water and uncollected piles of garbage. Security is controlled through armed checkpoint detachments. Fixed and mobile military check points are distributed in main streets and public spaces. Such military activities foster urban disorientation and create a sense of fear that negatively affects the social behaviour of the inhabitants (Fig.4).



Figure 4: Military barrack occupied the public space

Source: Authors, 2019

Before 2003, Al-Aziziah was easily identified by its narrow streets, low-rise buildings, and public open spaces where residents of the neighbourhood used to walk, socialize. After 2003, children's play areas and public spaces became military bases and garbage dumps. The painted concrete bricks which were once the main building material were replaced by military barriers and checkpoints, with a militarized public sphere of the neighbourhood. This intensive presence of the militarized features,

concrete obstacles, and the wreckages of conflict damaged buildings influenced people's conceptions of the physical environment. Throughout Iraq's cities and towns such phenomena undermine public health and mental wellbeing, and directly limit the social behaviour of residents. According to numerous investigations, women and children are the most profoundly affected by such outcomes of violence (Al-Ali, 2016; Green & Ward, 2009).

4. Analysis and Results

4.1 Urban Morphology Transformations

Usually, conflicts occur in areas of high value in term of heritage and identity. Researchers agree that the impact of armed conflict on land use is diverse and not limited, yet the most obvious side is density. The intensity of these densities is increased or decreased depending on many factors, for instance areas with a high-level of violence witnesses significant decrease in density, whereas in areas with low-level of violence, witnesses increase in density. Density is closely related to the services availability (Education, health, housing, transportation) at times of violence. The control of these services is inevitable in political influence (Butsic et al., 2015).

The impact of political violence on Ramadi's urban morphology transformation and physical and social environment are based on the interviews conducted with the officials, planners, architects, and engineers. Most participants agreed that Al-Aziziah neighbourhood was distinguished by its architectural and urban characteristics, with a suitably balanced solid-void ratio prior to 2003. During this period, they reported that the role played by civil laws and police was active and workable, and it contributed to the preservation of urban morphology development. Most of the participants agreed that the characteristics of urban morphology were profoundly affected for the worse after 2003. This change was mainly resulted from the weakness and inferiority of the state's authority to control urban growth. This change could mainly described in terms of the following themes.

4.1.1 The Militarisation of Urban Space

Panerai et. al (2004) stated that urban space is necessary for the reproduction process of the social life. Furthermore, urban planners and sociologists agreed that social space is an extension of urban space and the urban space is the placenta of social life. There is a reciprocal relationship between them. The presence of parks and public spaces, is only a response to social requirements as they an integration between the physical and social structures. Throughout history, wars and conflicts were taking place away from urban gatherings in open spaces such as deserts and forests. Currently, "urban warfare" targets governments zones of power and influence such as governmental headquarters, security and administrative facilities. The shift in the pattern of battles led to the militarization of civil life, which in

turn led to the emergence of so-called “militarization of urban space”. It is defined as the process intended to strengthen the control and influence of the urban spaces (Skidmore, 2003). The militarization of urban space is crystalized through “roadblocks” and “checkpoints”, to control the movement between different neighbourhoods. These barriers aim to disperse the inhabitants, subjugate them and then to control their political activities. Roads are strategically important sense their control give the advantage of logistical power to limit the enemies’ movement. This control of the urban space involves not only limiting the inhabitants’ physical activities such as going to schools, hospitals and so forth, but also it seized the social activities like cultural events, and family visits (Weizman, 2003; Gregory, 2008; Skidmore, 2003).

The most palpable point emerging from the field observations and survey was the impact of checkpoints, concrete barriers, and barbed wire on the public atmosphere, whether associated with the state or militants. The results indicated that militarisation practices had limited the inhabitants’ mobility, and their lives were generally confined to activities within the narrow and densely crowded neighbourhood. The vast majority (95%) of interviewees confirmed that political violence is the main cause of most urban and social problems afflicting the city of Ramadi. 80% of interviewees stated that the urban and architectural identity of Al-Aziziah were distorted, while ten of the thirteen agreed that Al-Aziziah was a safe community, but at great cost. The violence and the use of urban militarisation policies have affected the community’s attitudes to dispersed communities and they are economically exhausted. The interviewees affirmed that the fear of being hurt by others caused a sense of depression (Fig.5).



Figure 5: The militarization of urban space

Source: Kamal Namaa, 2013

The results revealed the negative consequences of the political upheaval on the social public health environment affirming James Gilligan’s (1997) theory about violence as a public health problem. He argued that only justice could prevent violence and foster a positive social environment. The results of the current study also corroborated Charles Tilly’s (2003) conception of collective political violence. He defined collective violence as a social interaction between two individuals seeking to harm others for psychological, physical or social purposes. He used the term “politics” to denote the strategies and activities used by social groups to achieve political goals and gains, which is similar to the case of Iraqi political upheaval.

4.2 Mapping and Layering

Transformation in the urban morphology of Al-Aziziah was tested in a case study format (before and after 2003). The shifts were explored in the neighbourhood according to the spatial analysis theories. The analysis was based on data from Ramadi's Municipality, UNSOAT organizations, international reports, Google Maps, and field observations.

4.2.1 Figure-Ground Theory Analysis

According to the FGT, the relationship between solid and void before 2003 was relatively even (55:45%) (Fig. 6a). Furthermore, the solid portion did not exceed more than 70% of the total house area in each residential plot parcel, facilitating gardens and back yards. The flat topography and green spaces of the neighbourhood played an important role in the solid void relationship before militaristic interference. In contrast, the analysis of the solid and void relationship in 2017 (Fig. 6b) reveals that the solid void ratio had increased to 83:17%, with a complete disappearance of harmony, hierarchy, and spatial organization due to this imbalance in solid and void. The voids inside houses (garden spaces and backyards) were turned into solid blocks, and in some cases, the built-up area comprised more than 100% of the house area, in violation of regulations, including construction on sidewalks. Public spaces which were the lungs of the neighbourhood were filled with military bulky walls and reinforced barriers.

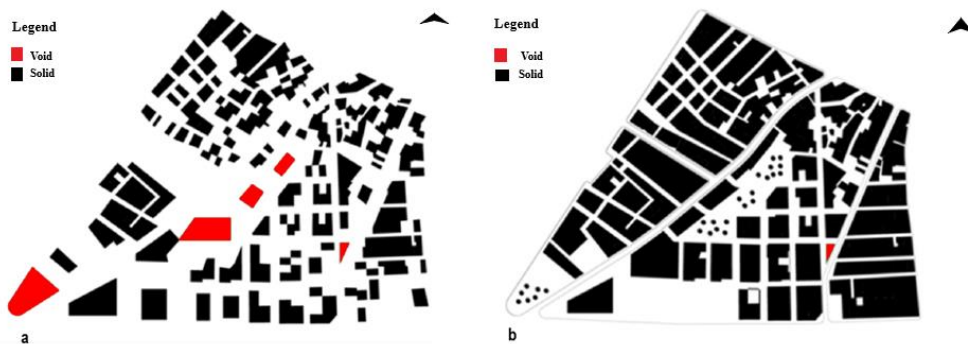


Figure 6: Ground analysis of Al-Aziziah (a) before 2007, (b) in 2017

Source: Authors

4.2.2 Linkage Theory Analysis

Linkages are the main urban generators of city morphology. The main ring-road, with its four main entrances to the neighbourhood, and narrow pathways are two main forms of linkages in the compositional and group form. Before 2003 the road and arterial network crossed the neighbourhood and linked urban blocks. Vehicles moved freely, helping residents to access workplaces, shops, and educational institutions with relative ease (Fig.7a). In 2017, due to security purposes, all entrances to the neighbourhood were

closed by concrete barriers to control and limit mobility, and to prevent access for vehicles from the secondary roads onto the main ring road (Fig.7b). The Green Corridor works as intermediate connector between major roads and the inner road network of Al-Aziziah. Road blocks prevent access for vehicles from the secondary roads onto the main roads. The secure military-controlled zones and bases have interrupted residents' mobility and discourage them from undertaking daily activities, including socializing. Furthermore, children are obliged to stay home, or to play inside their gardens where available (Fig.4).

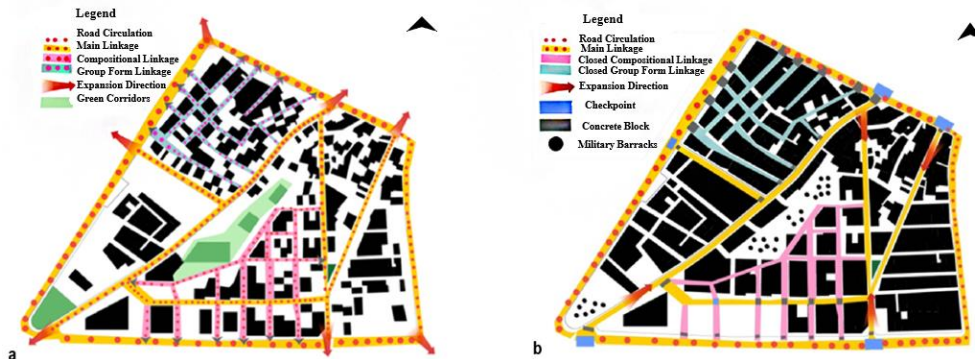


Figure 7: Linkages analysis of Al-Aziziah (a) before 2003, (b) in 2017

Source: Authors, 2019

4.2.3 Place Theory Analysis

This section explains the transformation of urban form in terms of Lynch's theory of Imageability. Based on the obtained data and maps, it is clear that Lynch's (1960) elements of urban design such as district, edge, landmark, node, and path were existent and recognizable prior to 2003, but following the invasion most of them had been destroyed due to violent circumstances, as adumbrated below.

District: Al-Aziziah was a very active district, because it contained significant buildings such as banks and hotels; however, after the violence it lacked basic criteria.

Edge: Due to the concrete masses and the military check points, the ring road formed an urban edge as well as path (Fig.7b).

Landmark: The main landmarks Great Mosque of Ramadi, the government complex, and Al-Rasheed Bank were located in the neighbourhood centre. Later, 65% of these edifices were totally destroyed and raised down. Their locations became a parking area and were used illegally by residents (Fig. 7a).

Node: Before 2003 three major nodes were identified at the corners of Al-Aziziah, which functioned as the main entrances to the neighbourhood. They were subsequently blocked by concrete masses and checkpoints, and the three nodes were reduced to only one, located at the southwest corner of the neighbourhood.

Path: The ring-road forms the main path of the neighbourhood. It is clear and distinct, well-defined and

accessible (Fig. 8a). In the post-violence era, the path's nodes were blocked, despite being the main path (Fig. 8b).

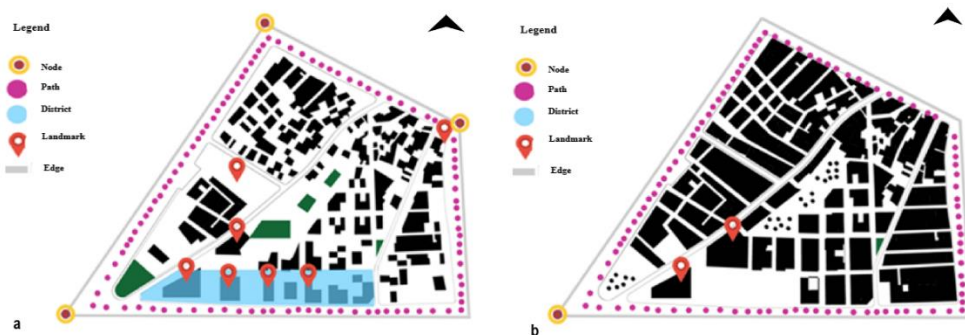


Figure 8: Place analysis of Al-Aziziah (a) before 2003, (b) in 2017

Source: Authors, 2019

5. Recommendations

Based on this study's outcomes, it is crucial to adapt new policies dealing with post conflict and crises urban policies. These policies should take into consideration the following recommendations for different stakeholders.

5.1 Local Authorities

- Enhance sustainable social justice at the economic, social, and political levels.
- Enhance the role of the law in combating crimes by using the “broken window” theory.
- Create an appropriate urban infrastructure for cities, to improve sewage, electricity, health, and education.
- Remove all forms of the militarization from residential neighbourhoods, such as concrete blocks, barbed wire, and military barracks.
- Reactivate public squares, parks, and libraries.
- Promote “eyes on streets” as a way to prevent crimes.
- Continuously re-assess socio-political and economic plans.

5.2 Planners and Architects

- Encourage participatory methods in design and planning in co-operation with citizens and all stakeholders.
- Redefine the elements of urban space and acknowledge their importance in the urban scene.

- Address urban confusion and chaos by redesigning demolished and damaged homes in line with the Iraqi society's principles and culture.
- Re-introduce gardens and back yards within each house, in order to enhance the aesthetic value of the built environment and to slow down the phenomenon of random land divisions.
- Design houses with high architectural value and low cost.
- Re-balance urban densities, creating new opportunities and economic zones.
- Use local materials to preserve the urban identity.
- Adapt long term strategies and projects to address housing needs.

6. Conclusions

The research revealed that there were significant changes affecting the elements of urban morphology in Al-Aziziah. These changes caused an urban disorder due to the abnormal obstruction in the urban extension of the neighbourhood, which is surrounded by roads from three sides and the adjutant neighbourhood. Consequently, the spread of urbanization from all sides has been curtailed, resulting in intense population within the core of the neighbourhood. Mapping the transformation in Al-Aziziah's urban morphology in different layers revealed that population density increased in the neighbourhood with proximity to the government headquarters, and because of internal migration for security. This exploration of Al-Aziziah's urban morphology offered a clear understanding of how urban violence has changed the urban forms of Iraqi cities in general. The results suggest that the absence of urban control policies to cope with the transformations and control of urban development result in unplanned and chaotic urban growth form.

References

- Al-Ali, N., 2016, "Sexual violence in Iraq: Challenges for transnational feminist politics", *European Journal of Women's Studies*, 25(1): 10-27.
- BBC News (2015). Iraq declares Ramadi liberated from Islamic State, <https://www.bbc.com/news/world-middle-east-35188479>, (Feb 21,2022).
- BBC News (2015). Islamic State conflict: Iraqi forces 'move into Ramadi', <https://www.bbc.com/news/world-middle-east-35158105>, (July 15,2019).
- Butsic, V., Baumann, M., Shortland, A., Walker, S., and Kuemmerle, T., 2015, "Conservation and conflict in the Democratic Republic of Congo: The impacts of warfare, mining, and protected areas on deforestation", *Biological Conservation*, 191: 266–273.
- Creswell, J. W., 2014, "*Research design: qualitative, quantitative, and mixed methods approaches*", USA: SAGE Publications.

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- Faihan, S., 2014, "Urban policy in Iraq for the period 1970-2012: Evaluation study", *Journal of Advanced Social Research*, 4(3): 58-76.
- Gauthier, P., and Gilliland, J., 2006, "Mapping urban morphology: A classification scheme for interpreting contributions to the study of urban form", *Urban Morphology*, 10(1): 41-50.
- Gilligan, J., 1997, "*Violence: Reflections on a National Epidemic*", New York: Library of Congress.
- Glaeser, S., 2001, "*Cities and warfare: The Impact of Terrorism on Urban Form*", Massachusetts: Harvard University Press.
- Green, P., and Ward, T., 2009, "The transformation of violence in Iraq", *British Journal of Criminology*, 49(5): 1-19.
- Iraq Body Count (2017), Post-Surge Violence: Its Extent and Nature, <http://www.iraqbodycount.org/analysis/numbers/surge-2017/surge2017.pdf>, (August 9,2019).
- Kamal Namaa (2013). Fighting erupts as Iraq police break up Sunni protest camp, REUTERS, <https://www.reuters.com/article/us-iraq-violence-idUSBRE9BT0C620131230>, (August 9,2019).
- Lawson, L., and King, B., 2012, "Theories of violence: A review of textbooks on human behavior and the social environment", *Journal of Human Behaviour in the Social Environment*, 22(5): 517-534.
- Lynch, K., 1960, *The image of the city*, 1st ed, Massachusetts: The MIT Press.
- Lynch, K., 1981, *A Theory of Good City Form*, Massachusetts: The MIT Press.
- Lynch, K., 1984, *Good City Form*, Massachusetts: The MIT Press.
- Maki, F., 1964, *Investigations in collective form.*, School of Architecture, Washington University, St. Louis.
- Mider, D., 2014, "Determinants of political violence: A study of the literature", *Journal of Social Science Studies*, 1(2): 177-197.
- O'Hanlon, M., and Campbell, H., 2008, *Iraq index: Tracking variables of reconstruction and security in post-Saddam Iraq*, Brookings Institution, <https://www.brookings.edu/iraq-index/>, (August 4, 2019).
- Panerai, P., Castex, J., Depaule J. C., 2004, *Urban Form: the Death and Life of the Urban Block*, UK: the British Library.
- Porta, D., 1995, *Social movements, political violence and the state: A comparative analysis of Italy and Germany*, UK: Cambridge University Press.
- REACH (2018), *Iraq - Anbar Governorate - Ramadi City (As of February 2018)*, Reliefweb, <https://reliefweb.int/map/iraq/iraq-anbar-governorate-ramadi-city-february-2018>, (February 21, 2022).
- Schubert, T. W., 2005, "Your Highness: Vertical Positions as Perceptual Symbols of Power", *Journal of Personality and Social Psychology*, 89(1): 1-21.
- Sharma, S. N., 2014, "Urban Forms in Planning and Design", *International Journal of Research*, 1(1):7-16.
- Simpson, G. (1993), *Explaining endemic violence in South Africa*, Centre for the Study of Violence and

- Reconciliation, <https://www.csvr.org.za/explaining-endemic-violence-in-south-africa/>, (August 4, 2019).
- Skidmore, M., 2003, "Darker than Midnight: Fear, Vulnerability, and Terror Making in Urban Burma (Myanmar)", *American Ethnologist*, 30(1): 5-21.
- Tilly, C., 2003, *The politics of collective violence*, UK: Cambridge University Press.
- Trancik, R., 1986, *Finding Lost Space: Theories of Urban Design*, U.S.: John Wiley & Sons.
- UN-HABITAT (2018), *Ramadi Urban Recovery and Strategic Spatial Development Plan*, https://unhabitat.org/sites/default/files/2020/09/ramadi_urban_recovery_and_spatial_development_plan_july_2018.pdf, (March 29, 2022).
- UNOSAT (2021), *Damage Assessment in Central Ramadi, Al Anbar Province, Iraq (15 Jan 2016)*, Reliefweb, <https://reliefweb.int/map/iraq/damage-assessment-central-ramadi-al-anbar-province-iraq-15-jan-2016>, (August 15, 2019).
- World Bank (2010), *Violence in the city: Understanding and supporting community responses to urban violence*, <https://openknowledge.worldbank.org/bitstream/handle/10986/27454/638880WP0Viole00BOX361532B00public0.pdf?sequence=1&isAllowed=y>, (July 18, 2019).
- World Health Organization (2002), *World report on violence and health*, https://www.who.int/violence_injury_prevention/violence/world_report/en/full_en.pdf?ua=1, (July 18, 2019).

