

A Conceptual Review of Discontinuity in Urban Design: The Morphological and Ethical Dimensions

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Abstract

This paper is a conceptual review of discontinuity in urban design. It focuses on clarifying and providing a deeper understanding of the concept, considering both its morphological and ethical dimensions. This paper aims to explore the various facets of urban discontinuity, clarify its theoretical foundations, discuss its contextual interpretations, and ultimately present a holistic and comprehensive definition synthesised from existing conceptualisations.

Within the theoretical framework, the paper discerns two fundamental forms of discontinuity. First, "material discontinuity" involves structural breakdowns in signifiers. Second, "ethical discontinuity" pertains to the lack of clarity in the relationship between signifiers and signified. We substantiate these classifications through validation in architectural and urban studies, emphasising that discontinuity permeates multiple levels, including the intellectual, moral, and physical realms.

The paper presents practical insights by analysing the emergence of discontinuity in Western urban design. This is achieved through a comparative exploration of medieval cities with modern industrial or contemporary cities. Additionally, it casts a critical eye on contemporary Arab-Islamic thought, highlighting the unique manifestation of discontinuity through the coexistence of traditional and contemporary urban systems.

In essence, this conceptual review provides to readers a clear and comprehensive understanding of the term "urban discontinuity" and its various interpretations within the urban design field. By uncovering the concept's meaning and manifestations, this paper substantially contributes to the body of knowledge concerning urban design. Architects and urban designers stand to gain valuable insights for navigating the challenges and opportunities posed by discontinuity, enabling them to craft urban environments that are not only responsive but also deeply meaningful.

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Main Highlights:

1. **Interdisciplinary Examination:** It examines discontinuity in various scientific disciplines, including language, philosophy, and scientific theories like the theory of Centre and Periphery and the Catastrophe theory.
2. **Exploration of Discontinuity in Urban Design:** The paper delves into the concept of discontinuity in urban design, considering both its morphological and ethical dimensions.
3. **Ethical Dimension of Discontinuity:** The paper explores the ethical dimension of discontinuity, with a focus on the interplay between Western cultural dominance, globalization, and the marginalization of non-Western cultures.
4. **Coexistence of Traditional and Contemporary Systems:** The coexistence of traditional and contemporary urban systems in contemporary Arab-Islamic thought is explored as a manifestation of discontinuity.
5. **Urban Discontinuity's Effects:** It highlights how urban discontinuities can arise from stark differences in architectural styles and urban design approaches, affecting the pedestrian experience, accessibility, and the overall cohesion of the city.

Introduction

The physical manifestation of a civilisation, known as the built environment, reflects the prevailing ideas and is susceptible to constant and urgent changes. Since many years, urban discontinuities have been a prominent aspect of urban development and planning. The discourse highlighted how different expressive languages can communicate ideas, while also proposing revolutionary philosophies that challenge the traditional structures of thought.

Urban design plays a crucial role in shaping the physical and social fabric of cities (Carmona et al., 2010). It involves the arrangement and organisation of various elements within an urban environment to create functional and visually appealing spaces. One significant aspect of urban design is the consideration of continuity and discontinuity in the morphological composition of the built environment. This text explores the concept of morphological dimension and its relationship to discontinuity in urban design, highlighting its impact on urban form and the overall urban experience.

This happened after the discontinuities and cuts called for by the previous proposals. However, this discourse has appeared within the framework of centralized domination and its cultural and ideological determinants, as well as what is called the current of globalization, which, despite its apparent discourse, practices a reduction of non-Western cultures and represents a discontinuity of relations between different peoples. The critical perspective on the data of modern Arab culture reveals a great dilemma, which is the similarity of Western culture and the concordance of its conceptions, and the necessity of rooted difference of dangerous opposed dichotomies at the heart of modern Arab culture, such as authenticity and modernity, self and other, past and present.

Urban discontinuities can also arise from stark differences in architectural styles and urban design approaches. An example of this can be seen in the contrast between the historical city centre and the modern business districts in many

cities around the world. The juxtaposition of architectural styles, from classical buildings to sleek skyscrapers, can create a visual and functional break in the urban fabric. This architectural disparity can affect the pedestrian experience, accessibility, and the overall cohesion of the city (Kropf, 2004; Yiftachel, 2017). One significant example of urban discontinuity is encountered in Putuo. It highlights a critical problem of the contemporary city structure: its physical, functional, and temporal discontinuity (Ceccarelli, 2019) or in the city of Berlin, Germany (Amelung, 2015). Another notable case of urban discontinuity can be observed in the city of Detroit, USA. Over the past decades, Detroit has experienced significant economic decline, resulting in vast areas of urban decay and abandonment (Sugrue, 2014). Urban discontinuities refer to the interruptions or breaks in the physical, social, or functional fabric of cities. These disruptions can manifest in various forms, such as physical barriers, stark socio-economic disparities, or stark differences in architectural styles. An example is Augustan city walls that were a physical manifestation of imperial values, designed to impress, intimidate, and visually reinforce the Augustan order (Pinder, 2017). They were used to display power relations, promote imperial ideology, and demonstrate a community's adherence to Augustus' program of renewal.

Despite this situation, it is still largely within the framework of centralized domination and globalization, which seeks to reduce non-Western cultures in favour of Western ideals. Modern Arab culture finds itself in a difficult position where those from other parts of the world often overshadow its values; however, critical perspectives continue to offer valuable insights into this issue.

The primary objective of this paper is to present a comprehensive and encompassing definition of urban discontinuity. By examining the concept from various perspectives and disciplines, the paper seeks to offer a thorough understanding of what urban discontinuity entails in the context of urban design. Three main sections organize the paper to facilitate a comprehensive exploration of the topic. The first section delves into the linguistic and philosophical aspects of discontinuity. It explores how different scientific domains and theories, including medical and biological sciences, centre-periphery theory, and catastrophe theory, contribute to our understanding of this concept. The second section focuses on the ethical dimension of urban discontinuity. It examines the moral implications and consequences associated with the presence of discontinuities in urban environments. This section aims to shed light on the ethical considerations that arise when planning and designing cities with discontinuities in mind. The third section investigates the concept of urban discontinuity within both Western and Arab urban design contexts. By comparing and contrasting these perspectives, the paper aims to highlight the similarities, differences, and unique challenges faced by different cultural and geographical contexts when it comes to addressing urban discontinuities.

1. Discontinuity in Various Sciences

1.1. Language

Language is essential to understand concepts because it serves as the primary means of communication and knowledge transfer among individuals. Concepts are abstract ideas or mental representations of phenomena, and language provides the tools to express and articulate these ideas. As it highlights the interruption, gap, and lack of communication, the word

"انقطاع" (interruption) in the Arabic language comes from the verb root "قطع" (cutting), which refers to severing and separating something. We say "قطع الشيء اقطعه قطعاً" (cutting something is to sever it completely). "القطيعة" (rupture) means abandonment or disconnection, as in "تقاطع الرجلان" (the crossing of legs when sitting cross-legged), or "إذا تصارماً" (if they quarrel and I send a message to her as a sign of their dispute). "فلان منقطع القرين في" (so-and-so is generous but has no companion). In some interpretations of the Quran, in the verse "فليمدد سبياً إلى" (let him stretch out a rope to the sky and then sever it) (Surah Al-Hajj, verse 15), "القطع" (severing) means cutting off. It can also mean loss, as in "قطع الفرس الخيل تقطيعاً" (the horse galloped away), or despair, as in "أي أمله انقطع" (he lost hope). It also means crossing, as in "قطع النهر" (crossing the river) (Harun, 101-103). "اتقوا القطيعة" (beware of cutting off) means do not disconnect from one another, and "المقطوع" (the cut-off) can refer to a severed hand or a broken family relationship (Al-Mounjad, 1986, 641).

The word comes from "تقطعوا أمرهم بينهم" (they divided their matter among themselves), meaning to separate and disconnect from each other. "تقاطع" (cutting) means separation or division, as in "بان بعضه من بعض تقاطعاً" (they became divided and disconnected from each other). "القطيعة" (cut-off) can also mean taking a portion of someone's wealth, as in "اقتطع من المال قطيعة" (he took a portion of the money). "انقطع الحر والبرد" (the heat and cold disappeared) means they went away, and "انقطع بالمسافر" (he was stranded) means his journey was interrupted because his mount broke down or his supplies ran out. "الدواء القاطع" (the definitive medicine) is one that completely cures the illness, and "برهان قاطع" (a decisive argument) is one that is convincing and leaves no doubt (Al-Mounjad, 1986, 639-640).

In English language, discontinuity corresponds to both "discontinuity" and "rupture". The Oxford Dictionary defines "discontinuity" as the quality or state of being discontinuous. It indicates the need for communication or denotes a state of interruption, break, or gap in sequence: "The quality of state of being discontinuous. Want of continuity, interrupted condition, break or gap" (Oxford Shorter Dictionary, 1965, 521). "Discontinuous," on the other hand, refers to highlighting the discontinuity, gap, lack of communication, lack of continuity, as well as the presence of an interval or break, intermittent and interrupted: "Producing discontinuity, gaping, not continuous, having interstice or breaks, intermittent and interrupted" (Shorter dictionary, 1965, 521). "To discontinue" as a source means to stop an action, put an end to it, or suddenly interrupt it, abandon it, or separate it: "To cease, to cease from (an action), to break of, to put a stop to, to give up, to interrupt, to disrupt, to sunder..." (Shorter dictionary, 1965, 521).

In Al-Sabek Dictionary, "rupture" and "discontinuity" are synonymous with non-continuity and break, where "discontinuity" means a break or lack of continuity, and "rupture" means a break (in negotiations) or a severance and a split. It is worth noting that the term "break" is used to mean fracture, break off, or gap, while "discontinuity" means cutting, discontinuity, and tearing of nerves (Al Sabek dictionary, 1985, p. 275). The same meanings are also found in Al Khatib dictionary (1371, p. 278). Similarly, the dictionary defines "rupture" as a break in relationships or friendly communications due to a breach of law or covenant. It also means a break in harmony or a surface or substance. The verb form means to break, burst, cause a break or sever. Synonyms for "rupture" include "break of covenant," "intercourse of peace," "break of harmony," "break in a surface or substance," and "act of breaking or bursting."

Thus, based on the preceding, discontinuity is as a state or quality, a state of being interrupted, severed, and detached. It

involves a separation from one point to another or a cessation of action, a violation of harmony or law, or the existence of a gap. It is the renewal of communication as its opposite, and discontinuity is the loss of a continuous link and relationship, with a final separating boundary or gap in the sequence.

Therefore, the concept of discontinuity is multiple in meaning and intersects in terms of its negative or positive connotations, and in other cases, it overlaps with both negativity and positivity simultaneously (Table 1). Thus, studying discontinuity requires going to other fields to clarify the concept, which will be explained in the next paragraph.

Table 1. Meanings of discontinuity in language

The Nature of Meaning	Arabic language	English language
Positive meaning	Disturbed in generosity	Put an end
	Behind and gone	Desist from
	Crossing over	
	Convincing	
	Without a doubt	
Negative meaning	Abandonment	Harmony interruption
	Asphyxiation	Stop state/ Breakage
	Imperfection	Refraction
	Despair of something	Sequencing gap
	Do not communicate	Presence of a comma
	Broking family relationship	Severance of friendly relations
	Disrepair	Sudden stop
	Out of stock	Violation of the law and breach of the covenant
	Against communication	The need for communication
Interpenetrated meaning	Splitting something from something	Stopping an action
	Dividing the matter	Abandonment Separation

1.2. Philosophical Discourses

The discontinuity started to appear since the emergence of various philosophical approaches in design, where design represents the arrangement made by thought to change an existing situation to a preferred one (Prost, 1992, p.12). In addition to being an intellectual product, its form and meanings are subject to the noisy changes that occur to thought (Prost, 1992, p.11). Existential questions concern basic parameters of human life, and are 'answered' by everyone who goes on' in the contexts of social activity. They presume the following ontological and epistemological elements (Giddens, 1991):

1. *Existence and being*: the nature of existence, the identity of object and events.
2. *Finitude and human life*: the existential contradiction by means of which human beings are of nature yet set apart from

it as sentient and reflexive creatures.

3. *The experience of others*: how individuals interpret the traits and actions of other individuals.
4. *The continuity of self-identity*: the persistence of feelings of personhood in a continuous self and body.

The Greeks and Romans believed that engineering is not enough for designing and planning cities, and proposed three basic methods of thinking:"

1. Starting or ending with a general layout using pure geometric shapes.
2. Relying on human senses and experience.
3. Relying on the principle of trial and error.

On this basis, three coherent and competing philosophies emerged over the centuries, represented by Empiricism, Rationalism, and Pragmatism (Broadbent, 1990, p.79). The *Rationalism* movement emerged due to the doubt about the ability of the senses to reach complete and certain knowledge, and the Western mind was stripped of the domination and control of the church. The process is closely linked to Enlightenment and modern capitalism. The growth of literary and scientific humanism was a reaction to establish a suitable framework for the success of the revolution against the Middle Ages. (Morris, 1979, p.121). Likewise, the irregularity of narrow streets was criticized "to the extent that everywhere appears as a 'chance' product more than one that is a result of human design" (Broadbent, 1990, p.82). Arab cities suffered from this logic that distorted them, describing them as a maze-like space that was randomly built and devoid of any architectural features. It needed to be breached and erased in order to be repaired. As an example, Le Corbusier pointed out, "A sick world... with no surgeon to operate... all cities are equally sick but a diagnostic is possible... we know now and with what we must act..." (Choay, 1997, p.261). This discourse revealed a scientific approach as it considered ancient cities as sick and their remedy was ablation or cutting. However, research indicates that this issue is not necessarily applicable to all global cities, and (Le Corbusier) should avoid extreme generalization, as such, a diagnosis requires a deep understanding of cities and to the society, they belong.

Empiricism movement emphasises the importance of observation, experience, and experimentation in the process of acquiring knowledge. It argues that sensory experience is the only source of knowledge: "all depends, on the senses..., with the ways in which his – designs might affect the senses of the users" (Broadbent, 1990, p 84). On the other hand, pragmatism focuses on practicality and usefulness in the pursuit of knowledge. It suggests that the truth of an idea can only be determined by its practical consequences and its ability to solve real-world problems. Each of these philosophies has had a significant impact on urban design and planning. This is the fundamental difference between the two philosophies. Rationalism has influenced the development of modernist architecture, which emphasizes clean lines and functional design. Empiricism has led to the use of user-centred design, which takes into account the needs and experiences of those who will use the space. **Pragmatism** has contributed to the development of adaptive design, which prioritises flexibility and the ability to respond to changing needs. Stern identified the split between Rationalism and Realism, where **Rationalism** was embodied in functionality and technology, while **Realism** is embodied in history and culture (Nesbitt, 1995, p. 26) This difference was the seed of the split that became clear with the modernist movement and then with the Deconstructivism movement. In reality, "the process of knowledge ultimately moves in one direction,

without any interruption, so that it is impossible to draw a final dividing line between what the metaphysical researcher does and what the theoretical and applied researcher does (Ibrahim, 1997).

In conclusion, these three philosophical approaches have played a crucial role in shaping our understanding of urban design and planning. While they may differ in their emphasis and methods, they all share a commitment in improving the built environment in ways that benefit people and communities. By understanding the strengths and limitations of each approach, urban designers and planners can create spaces that are functional, beautiful, and responsive to the needs of the people who use them. As a result, the split occurred due to the changes that took place in design thinking and methods of dealing with it, where extreme ideas led to decisive decisions and their generalization, thus excluding other ideas and aspects. Thus, the **intellectual posture** became fundamental in the occurrence of the split.

1.2.1. Intellectual discontinuity or the conflict of opposites

One of the activities of thought is linguistic action aims at mutual agreement and understanding, and assumes the maturity of the participants in the interaction (Affaya, 1998, p. 33). Thus, discontinuity occurs due to a lack of understanding and agreement within the dialogue between opposing pairs or different groups. According to Dostoevsky, dialogue is based on the double negation of the "hierarchical" logic that justifies the elevation or denigration of the voice, opinion, and thought of someone in favour of another logic of "centrality". This state generates in the self (of the author or speaker) and in his writings or speech, an illusion that his opinions, ideas, and positions are the standard (Al-Zahrani, 2000, p. 149). Thus, dialogue became a struggle to extract recognition of the self from the other, which led to the relationship of master and slave (as in Hegel's example).

The intellectual discontinuity or the conflict of opposing dualities should be resolved without leading to the death of either, as a definitive end to one of the parties in this conflict terminates the debate. Life is the natural state of consciousness and independence without absolute negation. Death is the natural (Harb, 1994). The result of the conflict is recognition of the other, and it is a relationship of cultural domination of one part of the world by another according to Chris Abel: "... A process of cultural dominance of one part of the world by another" (Abel, 1997, p.165). The modern vision has created liberation from traditional writings... and surpassed them (Al-Zahrani, 2000, p.149)."

Dostoevsky thought and later Bakhtin's thought helped in the collapse of traditional cognitive systems, causing the dogmatic views of human beings and the world in all its forms and scientific projects to be lost. There are many Western thinkers who have expressed this idea cognitively and philosophically, especially in the context of German thought from Hegel, Goethe, Schelling to Nietzsche, Husserl, and Heidegger (and recently Habermas)..." (Al-Zahrani, 2000). Marx touched upon the concept of discontinuity within class struggle and the phenomena of exploitation, where capitalism dominated and caused discontinuity or fracture and opposition in the system of mutual relations in the world between the ruling centre in the logic of the system and the other, the oppressed and excluded" (Chevallier, 1978, p. 93).

Nietzsche called for discontinuity through Nihilism philosophy, in which the self-consciousness, spirit, mind, will, truth, and thought are considered imaginary values. This philosophy has turned the system of opposition (good- evil), (truth-lie), and (essence-appearance)... and Nietzsche completely rejects antithesis and therefore rejects synthesis and argument (Harb,

1994). According to Nietzsche, the advancement of humanity leads to the promotion of hierarchy, where humans are viewed as superior and other people as mere tools. This struggle is always about contradiction and conflict, as noted by Lefebvre (1983). The general character of the world is confusion, which has existed since ancient times. This confusion is not the absence of necessity, but the absence of order, articulation, form, beauty, and wisdom. Tafuri (1979) analysed the causes of discontinuity in historical epochs and argued that the only way to salvation is to give up confronting negative aspects because they reveal the basis of the cognitive system, which negates others. Recognising negativity exposes the reality of the single discourse and its continuous implicit battle of exclusion, omission, and digestion. Discontinuity is the counterpoint to the main melody, where it coincides with it and separates from it at the same time. Fukuyama sees the pursuit of recognition by others as the driving force of history and its goal is to attain sovereignty that is realised in a democratic space (Harb, 1994; Safadi, 1990; Ibrahim, 1997). The text puts a democratic term in parentheses and raises the following question: How can space be democratic when it is based on a concept that perpetuates the final separation between two humanities? "A separation that involves despair, resignation, (discontinuity) from most of humanity...and a singular relationship...of forced submission...what is required is absolute severance." (Ibrahim, 1997). Thus, a logic similar to colonialism persists.

On the other hand, Foucault called for liberation from all forms of constraints that hinder human beings, such as those in "civil morality that governs our writing" (Foucault, 1987, p.18). He pointed out that every discourse conceals within it the ability to say something different from what it said and envelops a large number of meanings, which is a wealth of connotation in relation to reference. Foucault relied on the principle that nothing is ever fully said...and that phrases, no matter how numerous, remain...incomplete and unable to meet the need...Thus, the discursive formation appears as a principle of cutting within the entanglement of discourses and a principle of emptiness within the field of language at the same time. Therefore, the discursive formation is a distribution of scatters, voids, gaps, boundaries, and intersections (Foucault, 1987). Interpretation is one way of facing and compensating for the deficiency (the normative) by providing meaning (ibid.). As Jencks pointed out, the greater the deficiency in meaning, the more the complement can be subject to indefinite possibilities to the extent that the message (discourse) may lose its content and create a (moral) discontinuity. Al-Zahrani (2000) pointed out that the ideological stance declared in the context of the cognitive discourse does not generate dialogue as much as it generates a tendency to conform and align with it, or a tendency to differ from it or reject it, both of which narrow the scope of dialogue.

The term "dialogism" refers to an awareness of the reality of diversity and multiplicity, as well as a commitment to the legitimacy of difference and the right to think, express opinions, and viewpoints with the greatest possible freedom, whether in writing or in daily life (Al-Zahrani, 2000). This orientation indicates that any form of oppression, conflict, marginalization, neglect, or disregard leads to a loss of meaning in dialogism. Thus, a discontinuity or rupture occurs in relationships between dyads when there are negative relationships of denial and absolute opposition, and when tension is exerted on either side of the dyad, a break occurs. Similarly, tension in architecture leads to discontinuity. Excessively abstract architecture will not resort to what the individual knows or believes, and extremely representative architecture does not allow opportunity for imagination because of the clarity and directness of meanings (Jencks, 1985). Excessively abstract architecture causes confusion and ambiguity, and thus discontinuity due to the difficulty of understanding it by the

recipient (Antoniadis, 1990). In addition, tension between presence and absence causes discontinuity due to the ambiguity and obscurity of the text, which is a state of moral discontinuity.

In conclusion, discontinuity occurs within an opposing binary, or may appear to be so. In the absence of dialogue or the presence of monologist discourse, it relies on absolute negation and domination, leading to a negative discontinuity that aims to deny the other party's right to existence. This leads to discontinuity, fracture, and hostility between the binary. The nature of the discontinuity differs depending on the desired objective. Another aspect of the discontinuity concept is the discontinuity at the level of meaning in the abundance of connotations and the discontinuity at the level of formation (discourse), which is a physical discontinuity of discourse units. Dialogue loses its meaning if it relies on suppression, conflict, marginalization, ignorance, and neglect. It is evident that tension on either side of a binary leads to interruption. This gap represents the discontinuity between three different discourses (Figure 1).



Fig. 1. The discontinuity between the three different discourses

1.3. Medicine, Surgery and Biology

The concept of discontinuity in medicine refers to muscle and joint discontinuity (dislocation) where there is displacement at the bone level and generally, the end of the long bone separates from its joint capsule. "The joint capsule is torn, the ligaments are stretched, capsule and nerves and blood are injured." (Grolier, 1962). Additionally, the concept of bone fracture is considered a form of discontinuity where the broken bone moves freely. We should note that the severity of the fracture depends on the degree of movement of the broken bone, as it can develop a split and, in this case, the movement of the broken bone is prevented to avoid complete fracture (Grolier, 1962)

Discontinuity also occurs in grafting, which is a surgical process that involves transplanting tissue or propagation in plants through grafting. "The graft is not accepted and is rejected, and if not removed, the body dies" (Webster's, 1967, p. 362).

The concept of discontinuity also applies to phagocytosis, which is the process of destroying foreign bodies by engulfing and eliminating them (Al-Mawrid, p. 619). Einseman refers to grafting as an example of artificial origin, where the starting point is nothing or an artificial point. It is a form of discontinuity as it involves inserting a gene of a foreign body into another host to achieve a new result. "An artificial origin, as a genetic insertion of an alien body into a host to provide a new result" (Nesbitt, 1995, p. 220). Colquhoun notes that implanted elements in a city, such as foreign bodies in a living organism, exaggerate the discontinuity between the old and new, texture and structure, background and shape, context and meaning. (Colquhoun in Broadbent, 1990, p. 183) Discontinuity also occurs in the process of diffusion or osmosis between cells (Figure 2). This exchange is based on differences in chemical concentration and stops if the concentration difference disappears. Discontinuity occurs in two cases:

- a. if no difference in concentration between the media, the exchange stops, and
- b. If the concentration difference reaches a high degree.

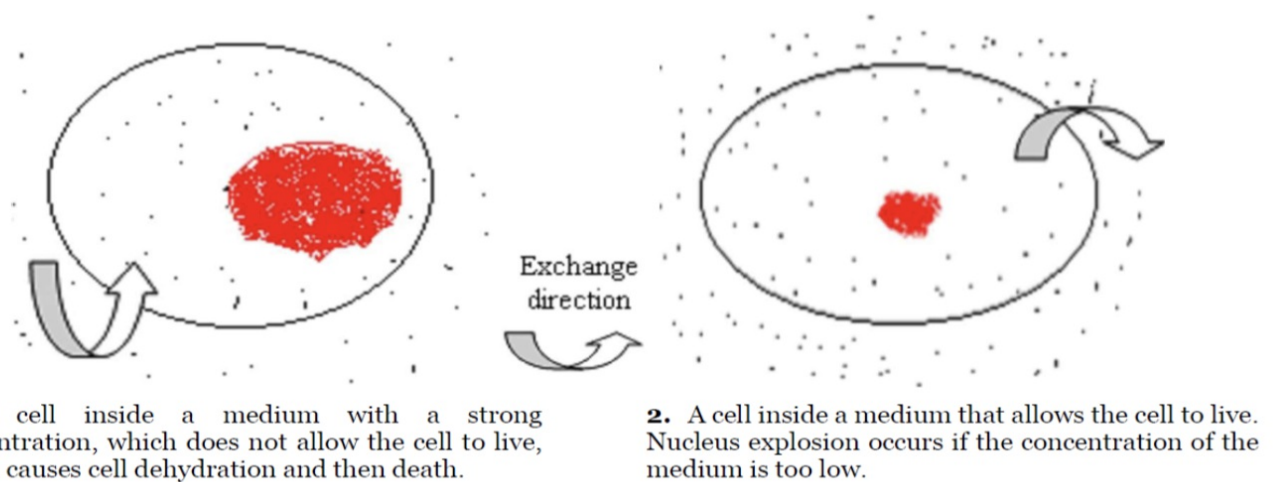


Fig. 2. Osmosis process.

1.4. Mathematical theories

A discontinuity is point at which a mathematical object is discontinuous (Stover and Weisstein, 2023). Points of discontinuity are isolated points.

1.4.1. Centre-Periphery Theory

In Centre-Periphery theory, Chevallier analyses the causes of discontinuity through polarizing dyads. The model of centre-periphery represents the fundamental gap between the principle of order and cohesion and the irregular and disparate elements. This gap allows for an irreducible split, from which the relationship of domination/subjection infiltrates, and is an asymmetric and non-neutral relationship. This split forms a distance that each pole aims to break down by dissipating the other. This dissipation occurs through either enclosure in a closed and entropic system or dissolution within the surrounding system. Chevallier presents two models of relationships between these polarizing dyads:

The centralized repressive model: a state of dominance that leads to increasing the tension in the periphery as the repression for the continuity of the system increases, but this state may lead to a break in the balance and the opening of a crisis. This model is based on negation and exclusion of everything that deviates from the norm, and it is characterized by closure in content and mechanisms for disseminating its standards. This state leads to non-adaptation, decline, or paralysis of the centre, or its suffocation and asphyxiation owed to entropy (Chevallier, 1978).

The characters of *Integrative Model* are openness and acceptance of dynamic creative tension. However, caution must be taken to avoid the disappearance of the first pole (centre) within the second pole (suburb) leading to the disappearance of the former. Complete dispersion results from negating the system within the suburb and halts the exchange as it is based on dynamic tension between conflicting parties leading to the disappearance of the system, making it vulnerable to external threats once its structural boundaries have been broken (Chevallier, 1978). Openness requires structural boundaries and channels of direction and feedback (discontinuity), where there are points that do not accept retreat, chaos cannot be condensed, and contradictions cannot be overcome to prevent final severance (Chevallier, 1978, pp.46-57). Openness strengthens the system, but at the same time weakens its privacy and threatens it with separation or discontinuity (Chevallier, 1978, p.80). The survival of the system depends on alternation (between centrifugal and centripetal forces), and in reality, both poles are subject to the same internal conflict (Cao, 1978, pp.62-63). As Schulz (1971) writes about the issue of openness and closure, pointing out that the city is not a closed system isolated from its surroundings, but rather it must have contact with elements from other levels, but communication does not mean dissolution within the surroundings.

1.4.2. Catastrophe Theory and its applications in urban planning

The French mathematician Rene Thom introduced the Catastrophe Theory in 1972 in his book '*Structural Stability and Morphogenesis*'. It is a branch of Differential Topology, which is a part of mathematics that studies deformations and describes the structure of phenomena that experience a sudden discontinuity after continuous operations. The theory can be applied to any sudden change in any process and it remains a subject of research until today. It plays a fundamental role in analysis and engineering and is characterized by its importance in the concept of communication, continuous and discontinuous functions, and the properties preserved after the deformation of spaces and sizes. Catastrophe Theory is an extension or application of topology in certain contexts. Topology or Analysis Situs primarily deals with the global properties of spaces and shapes while Catastrophe Theory focuses on the local behaviour of systems near critical points. It introduces the concept of critical points and describes how small changes in parameters can lead to abrupt and dramatic changes in the behaviour of systems between two states of equilibrium and disequilibrium.

Catastrophe theory considers discontinuity as a catastrophic event, which includes various discontinuities. They occur whether in nature (ruptures, breaks, thresholds, cycles, collapses, delays, tearing, accidents, changes of form or in the social realm such as family disintegration and social upheavals like revolutions) which undergo changes of form:

"Phenomena of rupture, break, thresholds, cycles, collapses, delay, accident, change of form, and other discontinuities are abundant in nature. Such events that we shall refer to, as "catastrophes" are not only encountered as natural phenomena but also as social events at the micro and macro scale. Families break up social upheavals and revolution

occur, bureaucracies – change their form (Dendrinis, 1987). Other examples of disasters in architecture in the West, as classified by Jencks, include the collapse of a palace or the destruction of the 10th century AD, and sudden jumps from one era to another, such as from the Gothic to the Renaissance era. These jumps are associated with the self-organizing system (Jencks, 1997).

Thom states that "Catastrophe theory cannot propose a solution to the great problems in philosophy that occupy human thought, but this theory facilitates the dialectical vision in a universe that has become a stage of continuous conflict between original higher patterns (archetypes) (Zeeman, 1977). Dendrinis (1987) wonders about the existence of a catastrophic phenomenon in the structure of scientific paradigms. This theory has been applied in various fields, where models have been proposed in embryology, psychology, new designs under testing and planning, economics, political sciences, and neurological disorders (Zeeman, 1977).

Catastrophe Theory, developed by René Thom, has found applications in various fields, including urban planning. In the context of urban planning, Catastrophe Theory provides a valuable framework to analyse and understand the dynamics of urban systems and phenomena. It enables planners to identify critical points and transitions in urban development, such as the emergence of new patterns, urban decay, or sudden shifts in land use. By studying these critical points, planners can gain insights into the underlying processes and make informed decisions about urban design, land use planning, transportation strategies, and resilience planning. Catastrophe Theory's applications in urban planning have been documented in research and literature exploring its potential contributions to understanding and managing complex urban environments (Lloyd, 2006; Pumain, 2006; Riha, 1985). It should be noted that while the theory offers a theoretical foundation, successful applications in urban planning necessitate interdisciplinary collaboration and consideration of specific local contexts and data.

Catastrophe theory provides a framework for abstracting the behaviour of a system by observing its structure or configuration (i.e., the form that can be seen with the naked eye) rather than observing the internal detailed structure of the system (Dendrinis, 1987). Its significant practical applications in planning include the Amson's (1974), Casti and Swain's (1976) studies. The idea is that cities were full of discontinuous change (Wilson, 1981; Batty, 1971) and relied upon non-linear logistic growth, leading to rapid change characteristic of some urban phenomena. Belmessaoud (2002), Abbas and Belmessaoud (2009) and Belmessaoud (2010) applied this theory combined with Space Syntax to urban morphology for detecting catastrophic events in the case of Al-Djazair Casbah urban fabric following the French military urban strategy. The research found that there was Bimodality in the behaviour of the traditional urban fabric where the Trajectory of balance Manifold moved from segregation to integration by the effect of the new fabric. The study added new concepts as to the Urban Design such as Singularity, Instability, and Conflict Nuclei. This result represents an unethical trend reversal (Belmessaoud-Boukhalfa, 2022).

2. Three Levels of Discontinuity in Urban Design

Accordingly, architects and urban are confronted to choose the right decision about discontinuity. The following section

focuses on the ethical dimension of discontinuity. Discontinuity in urban design can occur at three levels.

2.1. Intellectual Discontinuity

Intellectual discontinuity refers to a break or disruption in the flow of intellectual ideas, concepts, or paradigms within a particular field of study, philosophy, or thought. It occurs when there is a significant departure from established intellectual norms, traditions, or frameworks, leading to a shift in thinking and the emergence of new ideas or perspectives. This discontinuity can result from various factors, including the introduction of revolutionary theories, technological advancements, cultural shifts, or philosophical breakthroughs. Intellectual discontinuity often plays a crucial role in driving intellectual progress, challenging existing beliefs, and fostering innovation within academic, scientific, and philosophical disciplines. This discontinuity can be driven by a variety of factors, including the introduction of revolutionary theories, technological advancements, cultural shifts, or philosophical breakthroughs. It often plays a crucial role in driving intellectual progress, challenging existing beliefs, and fostering innovation within academic, scientific, and philosophical disciplines.

Discontinuity in thought does not exist in isolation but rather thrives within a complex ecosystem of diverse influences and historical contexts. It challenges our preconceptions, encouraging us to question established norms and ideologies. This exploration dives into the heart of what drives intellectual change, fosters dialogue, and shapes our understanding of the world. Through a nuanced analysis of the manifestations and implications of discontinuity in thought, we gain insight into the dynamic forces that have shaped our intellectual landscape and continue to influence our evolving worldview.

The exploration of the historical development of intellectual movements reveals that the modern trend prominently embraced rationalist intellectual inclinations, leading to a pronounced detachment of modern architecture from its historical roots and architectural heritage. It called for the purity of form, isolated from the local influences of diverse societies and from the urban design problem. Thus, there was a separation between urbanism and architecture. This break was due to the displacement of the individual from the centre of his world, where the modern movement was established and based on the basic displacement of the individual, which Foucault referred to as knowledge and episteme. This displacement was derived from an inhumane attitude towards the individual's relationship with his physical environment and broke the links with the historical past and the personal dimension of the individual (Man as subject), as well as the ethical positivism of form and function (Eisenman in Nesbitt, 1995).

The situational philosophy of August Kant supported the formulation of the Avant-Garde Theory in art and architecture, which is based on the radical break. The break represents a necessary historical rupture due to the connection between freedom and the new, as stated by the Avant-Garde movement "The philosophical underpinnings of positivism are thus important to the formulation of Avant-Garde theory in art and architecture which insist on the 'radical break'. The break, a historical rupture, is necessary because of the connection between freedom and the new as posited by the *Avant Garde* (Colquhoun in Nesbitt, 1995). The dismantling of systems of expression into small units of meaning and their reassembly without taking into consideration the grand systems produced from them characterized this rupture (Colquhoun, 1985). This extreme stance towards the past and the call for a new style implies a departure from all physical and non-physical

determinants that affect the style in general (Moholy, 1990), which has led to a rupture on the material level and a disconnection on the spiritual level.

In postmodern trend, the bases of Derrida's philosophy of absence are to criticizing Western centrism centred on the mind and the idea of presence. It produced intellectual practice around the Logos, a very rigid mental centrism that surpasses all intellectual practices that do not represent its conditions. The presence is the presence of the signified and the absence is the absence of the signifier. A vast, turbulent environment with no bottom or shores (by reading) (Ibrahim, 1997). The basis of the revolution is doubt about everything that is prehistoric, primary, and temporal, so deconstructive thought deconstructed the three basic binaries of philosophical rationalism.

2.2. Discontinuity in meaning (symbolic disruption)

In the intricate tapestry of human culture, symbolism holds a profound significance. It is the language of metaphor and meaning, transcending the superficial to convey deeper truths. Within this realm, "symbolic disconnection" emerges as a potent and enigmatic concept, weaving itself into the fabric of various aspects of human existence. This notion ventures beyond the physical and empirical, delving into the profound intricacies of human thought and expression.

Symbolic disconnection is the unraveling of meanings, the rupture in the seamless flow of symbols and their interpretations. It is a profound exploration of the spaces between symbols, where ambiguity and paradox often reside. In this exploration, we peel back the layers of human communication, delving into the enigmatic chasms that exist between signifiers and their signified. Through this journey, we begin to grasp the significance of these symbolic disconnections and their implications for our understanding of culture, language, and the very essence of meaning itself.

This inquiry into symbolic disconnection ventures into the uncharted territories of semiotics, linguistics, and philosophy. It challenges conventional notions of clarity and coherence in communication, and prompts us to confront the profound complexities that underlie the symbols we use to express our thoughts and emotions. Symbolic disconnection is a portal into the world of interpretation, where meaning is not a fixed point but a dynamic, ever-shifting landscape.

As we embark on this exploration, we navigate the nuances of symbolic disconnection, understanding how it shapes our perceptions, influences our discourse, and ultimately illuminates the intricate dance of human expression. Join us in this journey through the corridors of symbolic disconnection, where meaning reveals its multifaceted nature, and where the spaces between symbols beckon us to discover the hidden depths of human understanding.

Modern trend, sociologists believed that it was possible to apply general scientific laws of the material world to behavioural phenomena. They believed in the existence of a comprehensive positive world consisting of a coordinated system, not just a group of individuals. General laws based on reason govern this world: All the authors of the urban theories lay claim like Cerda with the exception of Sitte, to a scientific discourse (Choay, 1997). Helberscheimer suggests that every exception and every nuance must be cancelled out; abstract, mathematical order must reign so that it may constrain chaos to become form... with double objectivism i.e., mathematical abstraction of the city and the extinction of symbolic meaning. This means that any exception or subtle difference that cannot be understood must be erased. The abstract

mathematical pattern must be in control in order to constrain the non-system and transform it into form, with the goal of abstracting the city and extinguishing symbolic meaning. (Porphyrios in Nesbitt, 1995). Colquhoun defined the chasm [in the abyss] and identified it in the period between the 19th and 20th centuries. The architectural style lost the ability to give or provide specific meanings, and the elements of internal knowledge and experience were lost, as architecture is considered a form of this knowledge through experience. Colquhoun notes "...we cross a chasm (of late 19th and early 20th s.), during with the power of architectural style to convey definite meaning disappeared (Colquhoun in Nesbitt, 1995). The traditional space has lost the symbolic richness specific to traditional societies and has been replaced by univocity of sign and signal mechanism (Loschak in Chevallier, 1978). This space, characterized by standardization and slavery, has helped to alienate people from their societies. However, at the same time, the alienated space causes alienation because its bases were on a model of a society composed of people who have lost control over their future (Loschak in Chevallier, 1978). Modern space has become explosive, disconnected, and devoid of humanity, while the form has become functional. The social division of labour has confirmed racial discrimination and the disintegration of mass civilization, making humans strangers in their own space (Loschak, 1978).

In Postmodern trend, Deconstructionism relied on the separation of the relationship between the author and the text. The meaning of the text is used to coincide with the author's intention, but in deconstructionism, the meaning became slippery, undefined, and without depth. "... Meaning is indeterminate, elusive and bottomless" (Nesbitt, 1995, p.34-36). According to Derrida, discontinuity lies in not transcending such coincidence that reinforces the hegemonic plan of limiting modernity. The deconstructionist strategy relies on the discontinuity in meaning for the receiver, and because it lacks meaning and does not offer an alternative, it exposes the receiver to extreme ambiguity and complexity, making it difficult to convey the meaning, leading to discontinuity. Deconstructionism relied on difference, displacement, and continuous play of connotations in the meaning production process that leads to the proliferation and explosion of meaning. Toffler points out that the continued increase in cognitive overload and surpassing human adaptability levels may cause future shock (Smith, 1977).

2.3. Physical or morphological discontinuity (break)

The morphological dimension of discontinuity in urban design encompasses a fundamental aspect of how our cities and urban spaces are physically structured and arranged. It examines the visual and spatial characteristics of the built environment, addressing questions about form, layout, and the relationships between different elements within the urban landscape. This dimension of discontinuity delves into the way in which various architectural styles, materials, and urban planning approaches interact or clash to create a distinctive urban fabric. Understanding the morphological dimension of discontinuity is crucial for urban designers, as it influences the overall aesthetics, functionality, and user experience of cities.

A key consideration in urban design is the continuity or discontinuity of the built environment. Morphological dimension refers to the physical characteristics and spatial arrangement of urban *elements, including buildings, streets, public spaces, and infrastructure* (Madanipour, 1996). It encompasses the size, shape, scale, proportion, and spatial relationships of these elements (Hillier, 1996; Marshall, 2009; Alexander et al., 1977). The morphological dimension of a

city is crucial in establishing a sense of coherence, legibility, and identity. It influences how people perceive and navigate through urban spaces, ultimately shaping their experiences and interactions within the city. The morphological dimension of discontinuity focuses on the physical characteristics and spatial relationships that contribute to a sense of fragmentation or cohesion within urban areas.

Different factors influence *morphological discontinuity*: a) Historical Context: Historical events, such as wars, natural disasters, or urban transformations, can lead to morphological disruptions in urban design (Cullen, 1961). Post-war reconstruction often results in the introduction of new architectural styles and spatial arrangements, leading to a visual break from the pre-existing fabric. b) Socio-economic Factors: Socio-economic disparities and land-use patterns can contribute to morphological discontinuities. Variations in income levels, land values, and property ownership can result in contrasting building scales, architectural quality, and neighbourhood amenities (Gehl, 2010). c) Planning Policies and Regulations: Planning policies and regulations play a vital role in shaping urban form. Zoning regulations, development guidelines, and building codes can influence the continuity or fragmentation of the built environment (Carmona et al., 2010). Inconsistent planning policies may result in disjointed developments and visual dissonance.

Morphological discontinuity has many impacts: a) Perception and Identity: morphological discontinuities can affect the perception of place and identity. Fragmented urban design may create a sense of disjointedness and detachment, affecting residents' attachment to their neighbourhoods (Gehl, 2010). b) Connectivity and Accessibility: discontinuities in urban design can impede pedestrian and vehicular connectivity. Lack of well-connected streets and public spaces may limit accessibility and hinder social interactions (Hillier, 1996).

Typologies of morphological discontinuity are numerous: a) Scale discontinuity: variation in building heights and sizes within a neighbourhood or district can create a sense of visual disjunction. Contrasting scales can disrupt the overall urban fabric and affect the human experience of the environment (Madanipour, 1996). b) Architectural discontinuity: differences in architectural styles, materials, and detailing can contribute to morphological discontinuity. A mix of architectural styles without a cohesive design approach can lead to visual fragmentation (Kelbaugh, 2013). c) Plot and Street Discontinuity: Inconsistent plot sizes, setbacks, and street patterns can result in irregular and disconnected urban forms. Discontinuities in plot sizes may disrupt the rhythm of the street frontage and pedestrian experience. d) Open Space Discontinuity: Disjointed or poorly connected public spaces, parks, and plazas can hinder the continuity of urban design. Lack of connectivity between open spaces may limit pedestrian movement and reduce social cohesion (Lynch, 1960).

Physical or morphological discontinuity in urban design represents a pivotal concept that profoundly influences the visual, functional, and spatial characteristics of a city. This form of discontinuity is a defining feature of urban landscapes, manifesting itself as interruptions, gaps, or stark contrasts in the built environment. These disruptions can be caused by a myriad of factors, ranging from changes in architectural styles and building materials to variations in land use, infrastructure, and urban planning. The presence of physical block-level discontinuity can significantly impact the pedestrian experience, accessibility, and the overall cohesion of a city. Understanding and analysing these disruptions is vital for urban designers and architects as they seek to create harmonious and functional urban environments. In this context, the study of physical or morphological discontinuity plays a critical role in shaping the character and liveability of

cities.

In Modern movement, many shortcomings appeared in urban design, represented by the discontinuity of functions and areas, and a new social-spatial segregation emerged. In addition to the pendula movement, which represents the movement of going back and forth between work and residence, urban designers considered this discontinuity as essential for a new urban system praised by: *That the concepts of urban design are the four functions (housing, work, recreation, and transportation)* i.e. Le Corbusier and others in 1933. Modernity is essentially a post-traditional order. The definitions were initiated on: 1. *Separation of time and space*:the condition for the articulation of social relations across wide spans of time-space, up to and including global systems. 2. *Disembedding mechanisms*:consist of symbolic tokens and expert systems (these together = abstract systems). Disembedding mechanisms separate interaction from the particularities of locales. 3. *Institutional reflexivity*:the regularised use of knowledge about circumstances of social life as a constitutive element in its organisation and transformation (Figure 3).

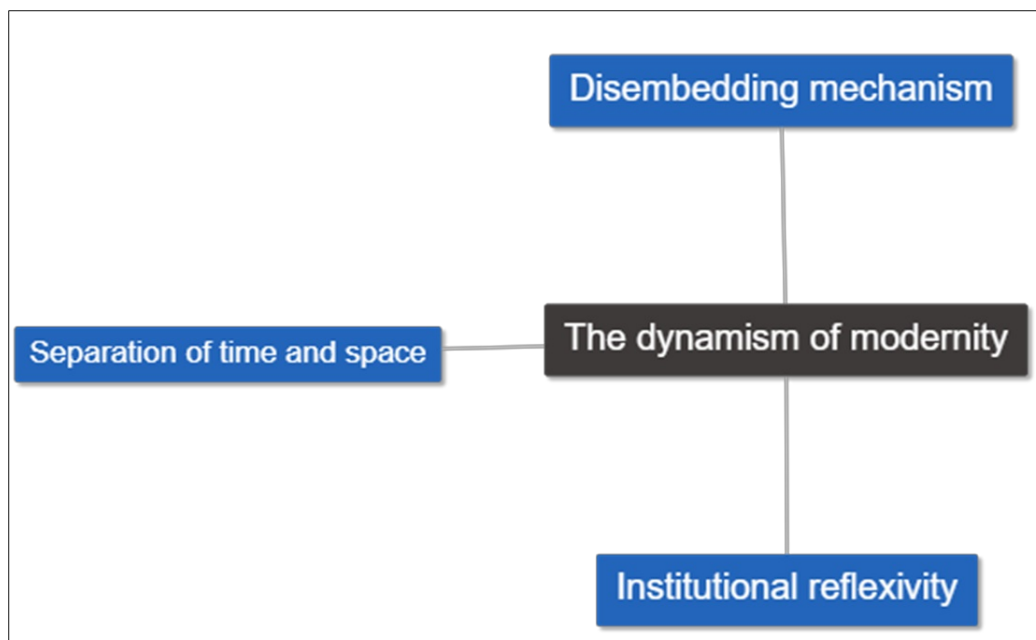


Fig. 3 The dynamism of modernity (Giddens,1991)

On plans, the structure or composition of each area is determined, and the articulation will provide the system in the urban region, with the fourth function (movement or transportation) connecting the three functions." (Athens Charts in Chevallier, 1978) Examples of this include the "Contemporary city" project in 1922.

The city became subject to rational solutions with the separation of main functions, movement systems, straight streets, and the separation of geometric blocks such as skyscrapers (Jencks, 1973). This led to the breaking of urban spatial links... The modernist attitude towards the site (nature) was manifested at the formal level (except for organic movement) in the confrontation of the building against nature. The form appears as a separate and opposing formation because modernity called for a clean slate from a radical rational face such as zoning, the city in the park, the freestanding building, and the disappearance of the street and square. The destruction of the urban block prompted Porphyrrios (1995) to say,

"... i.e., the destruction of the traditional urban fabric of the city.

This zoning led to the disappearance of the city centre and the loss of its political and symbolic integration function, leading to the emergence of the Mega polis and Urban Anomia. Although this phenomenon only affects a number of cities (as in the United States cities), the danger lies in social and spatial disintegration and the scarcity of communication between groups and their isolation in space. Olivier Guichard points out that the working city, HLM neighbourhoods, and suburbs are perverted structures or at least places for learning social secession (Chevallier, 1978). F.L. Wright refers to this issue when he said, "*We are witnessing the acceleration that precedes dissolution*" (Wright, 1970).

The same opposition persisted, which could not be reduced to two opposing images linked to the same relationship, hindering the urban designer from finding a middle ground. While he called for radical elimination of the existing built environment, Le Corbusier called for a "clean tablecloth"...the ideology of ex-nihilo and tabula rasa... ideology of ex-nihilo and tabula rasa" (Choay, 1997). The architecture of international modernism has led to despair in many cities and thus to crime, and the example of this phenomenon (environmental discontinuity and social link) is the housing project in St. Louis, Missouri in the United States (Figure 4).



Fig. 4. The Pruitt-Igoe public housing complex in St Louis, shortly after its completion in 1956. Photograph: Bettmann/Corbis (<https://www.theguardian.com/cities/2015/apr/22/pruitt-igoe-high-rise-urban-america-history-cities>)

Le Corbusier condemned the false nature of the suburbs, in the face of the scattered and broken edges. They have been torn and scattered in meaningless fragments across the countryside. He proposed in the (Radiant City) the optimal and

radical redemptive solution, which is complete solutions in a correct, realistic, and exact plan: "... a radical redemptive solution... solutions that are "perfect" on a plan that is "correct, realistic, exact..." (Choay, 1997). Eisenman sees that abstraction, atonality, and atemporality are stylistic phenomena of modernity and not its essential nature. (Eisenman in Nesbitt, 1995) This trend called for communication with the past in general, such as Rossi and Graves, and with the spirit of the age (Zeitgeist). This trend was divided into two positions: The first position is against modern theories (Anti-Modern Theories), which called for a radical break with modernity and a return to history, and is considered retrograde (Nesbitt, 1995). In his dealings with modernity, he treated extremism with extremism, although not everything that modern thought brought was negative, and that this trend was based on imitation or plagiarism of the past. L. Steil classified this formula into two types: total copy and partial copy pastiche.

The first formula relies on a mechanical and repetitive reproduction of the original source and focuses on superficial characteristics without addressing the essential ones. It is a duplicated and identical copy of the original source. The second formula is a simplified production of some of the components of the original source. This partial copy lacks accuracy and efficiency compared to the original version. Both of these formulas rely on intertextuality and modelling, may create a moral discontinuity with the receiver due to boredom (Nesbitt, 1995), and are based on the degree of similarity and similarity between previous and current products. This trend coincided with an advanced (Pro-modern) and opposite position. Supporters of this belief such as N. Foster believed that this extreme position stems from a desire for social control.

In Postmodern movement, Deconstructivism exploits leading movement schemes, negating ideas of order, clarity, and tradition, and architecture should become an experience of failure and crises. (Porphyrios). Deconstructivism relies on separation from models and works on boundaries to reveal and dismantle (Nesbitt, 1995) contradictions. B. Tchumi in Paris applied deconstructionism projects in urban design in the project of La Villette. Tchumi's work stems from the strategy of discontinuity (disjunction), which rejects totality and composition based on the logic of disturbance that dominates the work and never achieves its goal. The consequences of urban deconstruction threaten, as Derrida notes: *The constructional possibility of form is precisely its violation by a subversive alien, foreign body that already inhabits the interior and cannot be expelled without destroying its host* (Broadbent, 1990). We note the similarity of this process with the process of grafting, which destroys the host body in case of rejection.

3. The ethical nature of discontinuity

3.1. Ethical discontinuity

Positive discontinuity is an ethical issue that can play a crucial role in many matters, but that is related to circumstances and goals. It serves as protection for human ethics and preserves family and social cohesion by avoiding harmful behaviour and actions. Discontinuity also allows temporary detachment in order to understand and differentiate between matters. In sciences, discontinuity refers to the positive radical break in the process of breaking down nature into its constituents in order to understand relationships. The new sciences represented a radical break with previous scientific

thought. A.D. Hall distinguished two types of rupture according to Abel (1997):

1. The loss of information or entropy and decay, where the parts are cut and do not follow the systems behaviour.
2. In the growth of organic systems, the system changes spontaneously towards division into secondary systems (sub-systems) or (sub-sub systems) or a change in functions.

Creativity does not create a break with the past as much as it shows a new pattern that partially extends its roots in previous traditions (Broadsky in Abel, 1997). Chevallier indicates, "Sometimes the will to break can be positive and create new vitality, such as May 1968 movement in France"¹(Chevallier, 1978, p.55). Moreover, independence does not mean disconnection and isolation from the world as in the case of Sun city where only persons whose age is not less than (55) years old are accepted. It means stopping the bridges of dominance and activating the bridges of cooperation with others (Iskandar, 1980, p.346).

In architecture, positive discontinuity aims to create mystery for the pleasure of the perceiver, as in the Sukiya housing project (Figure 5). Sukiya designed spatial relationships with a series of experiences that make them ambiguous with the presence of interruptions. These offsets break the view and create surprise for the user by the various changes of direction.

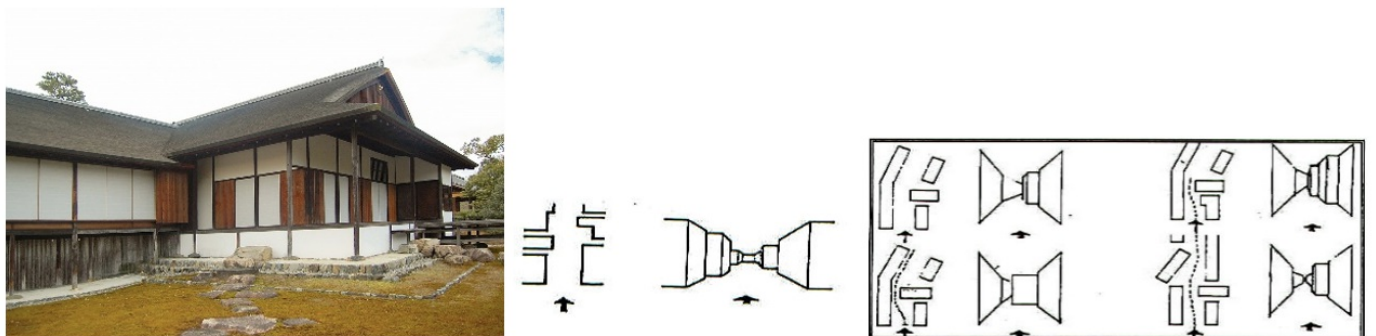


Fig. 5 Positive discontinuity in architecture (An early example of Sukiya style (<https://en.wikipedia.org/wiki/Sukiya-zukuri#/media/File:Shoin.jpg>)).

3.2. Unethical discontinuity

The contemporary urban landscape apparently reveals the conflicting goals of the postmodern world. On one hand, it illustrates a flow of hegemonic, dense and interconnected ideas, values, images and lifestyles. On the other hand, expresses an identity quest. Thus, beyond the aesthetic characteristic, the current morphology of the city materializes an ethical reversal, because of the presence of anti-values, and contradictory norms (Belmessaoud-Boukhalfa, 2019).

Then, unethical discontinuity arises when extremist thinking manifests, characterized by exaggeration and an excessive pursuit of ideas, often leading to morally questionable outcomes. Destructive discontinuity is cutting off a relationship that should be continuous, which leads to loss and corruption as Allah (SWT) says "*And they cut off what Allah has commanded to be joined and caused corruption on earth. Those are the losers*" (Al-Baqarah, 27 - Ar-Ra'd, 25). Kant situational philosophy, which relies on empirical facts while neglecting all abstract thinking, formed a discontinuity with

classicism (Colquhoun in Nesbitt, 1995, p. 205). This philosophy supported the formulation of the pioneers' theory in art and architecture, which emphasizes radical discontinuity. This break is nothing but a historical break that became necessary (in their point of view) (Colquhoun, 1995, p. 200).

Based on situational perceptions, the Russian formalists worked on transforming criticism into a descriptive and analytical discourse that focuses on forms, structures, techniques, and functions, neglecting the psychological, social, and ideological meanings and connotations as something that takes critics to the realm of interpretations that cannot be controlled. This perception considers the text to be reduced to its internal functional techniques, methods, and structures (Al-Zahrani, 2000, p.152). The thought of modernity adopted the philosophy of situation and nihilism, and extremism with the ideology of the clean slate (Tabula Rasa) and (Ex-Nihilo), which destroyed the fabric of the city (Choay, 1997, p.262). Extremism reached its peak in the international style and provoked violent reactions, including those who called for another extremism, which is the complete rejection of modernity, such as the historian Tafuri (1979) and postmodern theorists (Anti-Modern). The myth of modern architecture must be completely killed. The outcome of such thinking is obvious in urban landscapes (Figure 6).



Fig. 6. Unethical outcome of the liberal thinking. <https://apnews.com/article/brazil-sao-paulo-9b49da65d993e32b7b85f0393c1bc9d4/gallery/be35a6fcd52d473b9ecd7177503d74e7>

Destructive disruption occurs when intellectual conflicts turn unfair and are marked by exclusionary ideological extremism.

As pointed out by Al-Talibi, the concept of modernity can be wrongly perceived as innovation, and every innovation is considered a misguidance, with misguidance being likened to a destructive path. Moreover, when this notion takes hold, it can lead to stagnation and a lack of progress. The solution, as argued by Talbi, is to ensure that intellectual conflicts are conducted fairly, free from ideological extremism, defamation, and the unjust expulsion of any party. Al-Talibi suggests that universal ethical principles can be derived from the Qur'an, a core element of the religion that he describes as visible to all due to our innate sense of right and wrong, or *fitra*.

Collecting ideas that do not have any logical connection between them leads to a discontinuity because this process works on losing the sequence of ideas (Cohen, 1986). Discontinuity has been adopted in the Deconstructivist movement as a strategy to create continuous architecture by cutting the relationship between the product (the text) and the designer (the author). It is an investment in Barthes' idea of the death of the author, as well as the deconstruction of the text. Although this architecture creates new pleasure, it has created a discontinuity in the recipient due to the ambiguity of the text's meaning (total absence) (Jencks, 1988). Culler also discusses graft as a deconstruction element in Derrida's work and asks, "What are the points of juncture and strength where one scission or line or argument has been sliced one another?" (Culler in Nesbitt, 1995). Belmessoud-Boukhalfa (2022) explored and assessed the physical nature of the ethical discontinuity. The physical characteristics underlie the embodiment of the ethical trend.

Thus, the nature of the concept of discontinuity is related, in fact, to knowing the rule before breaking them (El Wakil in Abel, 1987). This statement highlights a key principle in the understanding of discontinuity in various fields, including urban design. This is particularly relevant in urban design, where there's often a need to strike a balance between preserving the historical fabric of a city while introducing innovative and modern elements. It underscores the idea that successful urban development requires a deep understanding of the city's heritage and existing urban rules before implementing changes that bring about discontinuity in a way that enhances the urban environment. In essence, this statement suggests that to effectively create or introduce discontinuity within a given context, one must first possess a comprehensive understanding of the established rules, norms, or conventions within that context. It implies that a deep awareness of the existing order or structure is essential before intentionally deviating from it.

The main forms of urban discontinuity are: **1. Discontinuity in Thought:** has various aspects and implications. It refers to a multifaceted and complex concept that encompasses both morphological and ethical dimensions within the realm of intellectual exploration. **2. Unethical Discontinuity** in urban design refers to actions or practices that violate ethical principles and contribute to negative consequences in the urban environment. It can manifest in various forms. **3. Morphological Dimension of discontinuity** refers to the physical characteristics and spatial arrangement of urban elements that contribute to a sense of fragmentation or cohesion within urban areas. This dimension encompasses factors such as historical context, perception and identity, connectivity and accessibility, and various typologies of morphological discontinuity. These physical characteristics and spatial relationships play a crucial role in shaping the coherence, legibility, and identity of urban spaces, ultimately influencing people's experiences and interactions within the city. (Table 2.)

Table 2. the main forms of urban discontinuity

Discontinuity in thought	Unethical discontinuity	Morphological dimension
Multifaceted and Complex Concept: extends across various fields of study, including science, philosophy, and architecture.	Marginalization of non-Western cultures: The dominance of Western cultural ideals and the reduction of non-Western cultures can lead to a discontinuity of relations between different peoples, undermining cultural diversity and inclusivity.	Historical Context: Historical events, such as wars or urban transformations, can lead to morphological disruptions in urban design, resulting in a visual break from the pre-existing fabric.
Interdisciplinary and Cross-Cultural Influence: Discontinuity in thought is influenced by a diverse range of disciplines, languages, and cultures. It is shaped by a dynamic interplay of these influences.	Exaggerated expressions of ideas: Negative discontinuity can arise from extremist ideologies and exaggerated expressions of ideas, which can lead to social divisions and conflicts.	Perception and Identity: Morphological discontinuities can affect the perception of place and identity, creating a sense of disjointedness and detachment.
Separation in Modern Architecture: In the context of modern architecture and urbanism, the concept is associated with a separation between urbanism and architecture. This separation results from the displacement of the individual from the centre of their world and a detachment from historical traditions.	Disruptions in social cohesion: Urban discontinuities, such as stark socio-economic disparities or physical barriers, can create social divisions and hinder the overall cohesion of the city.	Connectivity and Accessibility: Discontinuities in urban design can impede pedestrian and vehicular connectivity, limiting accessibility and hindering social interactions.
Radical Break in Avant-Garde Theory: The Avant-Garde Theory in art and architecture emphasizes a "radical break" from past conventions, highlighting the connection between freedom and innovative thinking.	Loss of information or entropy: unethical discontinuity can occur when parts of the urban system are cut off and do not follow the behaviour of the overall system, leading to decay and a loss of information.	Typologies of Morphological Discontinuity: Variation in building heights, architectural styles, plot sizes, and open space design can contribute to morphological discontinuity, disrupting the overall urban fabric and human experience of the environment.
Postmodern Critique and Deconstruction: related to a critique of Western centrism, a questioning of prehistoric and primary concepts, and an embrace of deconstructive thought that challenges traditional binaries and assumptions.		

4. Civilizational Forms of Discontinuity in Urban Design

Urban design is a complex fabric that weaves together architectural styles, cultural influences, and the ever-evolving needs of society. In this intricate landscape, the concept of discontinuity plays a crucial role, both morphologically and ethically. This section sheds light on the multifaceted nature of discontinuity. With a particular focus on the interplay between Western cultural dominance, globalization, and the marginalization of non-Western cultures, we identify various forms of discontinuity, both positive and negative, with implications ranging from intellectual dialogue to extremist ideologies. We also venture into the heart of Arab culture, analysing the dichotomies within it, such as authenticity and modernity, self and other, and past and present, in the context of discontinuity. Comparing medieval cities to modern metropolises allows to understand the emergence of discontinuity in Western and Arab urban design. Ultimately, our aim is to enrich our understanding of discontinuity's profound impact on contemporary urban design, providing valuable insights for architects and urban planners alike. It clarifies the intricate fabric of civilizational forms of discontinuity in urban design, where the past and present, ethics and aesthetics, culture and globalization intersect to shape future cities.

4.1. The Western Urban Design

Western architecture and urban design have displayed a certain degree of relative stability since the Greek civilization until the Middle Ages. However, during the Middle Ages, the church gained tremendous influence, leading to the formation

of a movement that opposed it during the Renaissance. Some theorists disagree on the occurrence of the discontinuity during this period. Some argue that there has been a rupture from the Renaissance to modernity, such as Tafuri, Foucault, Colquhoun, Porphyrios, while others argue that there has been no rupture in the past 500 years, such as Eisenman and Jencks.

The controversy surrounding this period is based on two historical facts: the first indicates that history represents the idea of cultural, philosophical, and scientific communication. It offers us a description that shows the continuity of philosophical and scientific systems' lives. The second fact indicates that history has recognized another reality that defined the cultural identity of each epoch. This cultural particularity distinguishes the historical period and points to the cognitive discontinuity with the components and methodologies of a previous period. This discontinuity outlines the boundaries of a new era while pointing to the end of a previous era (Farhan, 1985, pp. 18-19). Tolstoï wrote in *War and Peace* (1869) that the human movement that appears from many random human wills is continuous. The goal of history lies in understanding the laws of this continuous movement through taking a very small unit for observation (i.e., the differential history or individual inclinations of people) and reaching an art of integrating these units (i.e., finding the sum of these very small values, infinitesimals). The author suggests reaching the laws of history through this theory.

Ledrut confirms that the Greek city was open and mobile, and space reflected the plasticity of society's life. However, urban social life began to dissipate due to individualism and the formation of empires, especially the Roman Empire. The concepts of rational and geometric systems began to enter the space: as the grid plan and the regular broad road network around large squares. They also attempted to compensate the weakness of spontaneous social links through the administrative organization of the city (Chevallier, 1978).

During Ages era, Christianity was centralized where the church represented the visual and kinetic central hub of the city, representing a phase of balance where the urban space was organized on an economic basis. The difference in space was based on social relationships established on artisanal differences where each neighbourhood represented a specific craft. These economic links were manifested in the mutual dependence of different parts of the space (Loschak in Chevallier, 1978). The discontinuity between the community and the spatial system became increasingly apparent (Loschak, 1978, p. 188). This was pointed out by (Colquhoun) in (1985) and (Mumford) suggests that the spiritual system was separated from the temporal system during this period (Mumford, 1964). During this era, there was a contrast between organic growth and planned urban form (Morris, 1975, p. 88). The rules of topology governed this organic space (Broadbent, 1990, p. 21).

During the Renaissance period, a strong contrast appeared between the organic fabric of the Middle Ages and the network fabric of the Renaissance, where the geometric rules governed the cities of the Renaissance (Broadbent, 1990). The best example of this contrast is the city of Vienna and the city of Brussels, where Vienna was the context for formulating the first hypotheses of art history in the last quarter of the nineteenth century (Choay, 1997). Architectural historian Tafuri, who calls for historical communication in his book *Project and Utopia* (1979), attributed the beginnings of discontinuity to the Renaissance. In the introduction of this book, Huet noted, "the beginnings of discontinuities, ruptures, and crises have appeared since the Renaissance". He attributed the reason to handing over Renaissance projects to

ideologies that opened the door to dogmatism, placing the history of Western architecture under the slogan of (Icare)². This history was full of discontinuities, ruptures, and crises due to the continuous influence of ideologues (Tafuri, 1979). According to D. Banham, the rupture between ancient and medieval traditions occurred in the mid-eighteenth century, where idealism, pragmatism, creative systems, and artisanship were not separate, and after the rupture, architectural activity lost its unity (Colquhoun, 1985, p. 33). Colquhoun identified the rupture between the Renaissance city and the medieval city through the proposal of the systematic theory and the distinction between rulers and ruled (1985, p. 95).

The city became a symbol of the mind (logos) in the Renaissance period rather than the natural arena of the masses (forum). However, the Renaissance called for communication with ancient and distant history (Colquhoun in Nesbitt, 1995, p. 204). After this period, various trends emerged, and the accumulated architectural experiences adapted to a secular oscillated cycle between the Greco-Italic and Greco-Roman classical systems (Figure 6). This cycle ended with the arrival of modern architecture, and surpassing this cycle became the only way for modern architecture to survive (Frampton in Guinzbourg, 1982, p. 19).

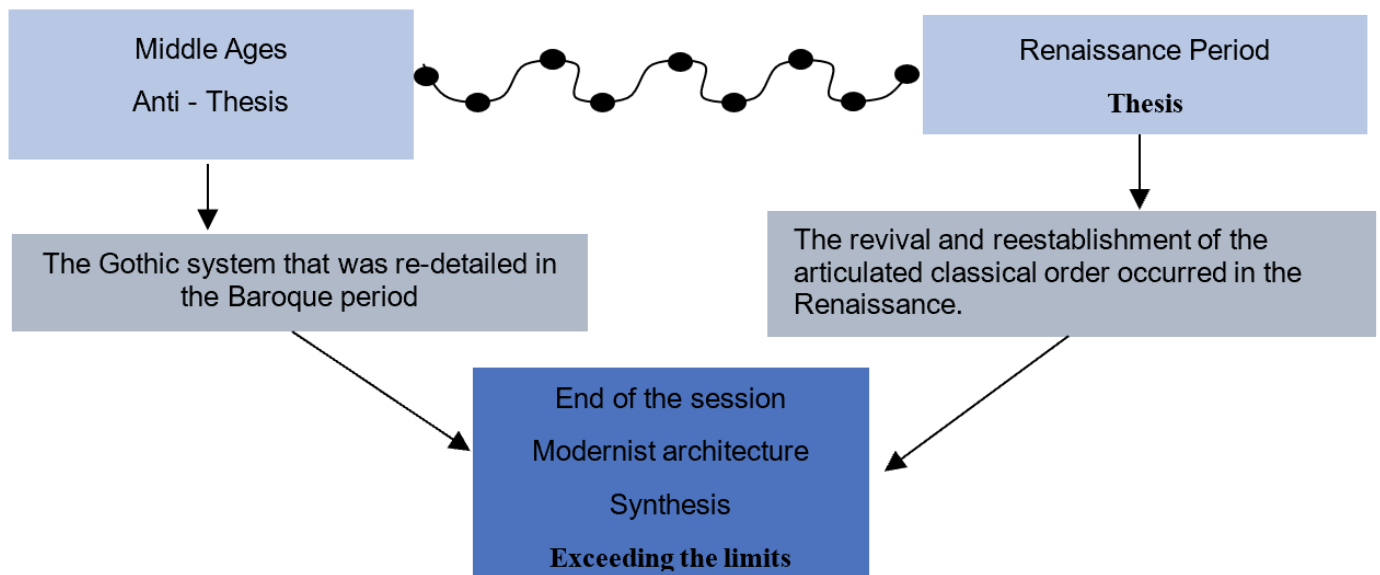


Fig. 7. Illustration of the eternal cycle of discontinuities / source: author from (Frampton in Guinzbourg, 1982)

The modern movement ended the selectivity and multiplicity of the 19th century and the period that preceded it, as R. Venturi and S. Brown noted, "Purist architecture was partly a reaction against nineteenth century *eclecticism*" (Venturi in Nesbitt, 1995, p. 311). Investigations that addressed modernity emphasised on three fundamental concepts: subjectivity, rationalism, and nihilism. Modernity is founded on a discontinuity, cutting off from everything that preceded it, in its search for the new, and is a tool for bringing about disjuncture (Shawani, 2000 in Lefebvre, 1983, p. 12). The increasing focus was on objective facts, with a clear break from all subjective values. Forms are governed by functions and stripped of symbols, and inherited meanings in traditions. Its objectives are linked to utilitarianism and purity (Rowe, 1988). The concepts of abstraction and reduction were derived from rationalism, as well as pragmatism (a method that is concerned with only physical facts) (Broadbent, 1990, p. 325). A shift towards simplification, functionalism, and industrialisation

followed this trend. The characters of Modernity are a break at three levels: a discontinuity in thought, at the level of meaning (symbolic disconnection) and at the physical level (break) or discontinuity at the blocks level.

Postmodern era, the intellectual point of view took another intellectual direction with J.F. Lyotard, who waged war on totality and totalizing intellectual schemes and avoided nostalgia for wholeness, as stated by (Nesbitt, 1995, p. 44). The discourse called once again for rupture and dismantling within structures and colleges. Many reactions emerged in urban design towards fragmentation and explosion of space and the loss of the physical identity of the city. A renewed interest in traditional urban art emerged as R. Krier, Culot and B. Huet, as well as new formal schemes in urban composition such as the research of G. Hanning and C. Portzamparc, and the works of B. Tchumi, R. Koolhaas, R. Barrios, and C. Rowe, where contextualism and collage city were introduced (Ibid.).

However, some scholars reject these formal schemes, arguing that the explosion and fragmentation of urban space cannot be eliminated. Sassen (1991:7) defines it as a “systemic discontinuity between what used to be thought of as national growth and the forms of growth evident in global cities”. M. Webber's *Post Age City* (1967) refers to the end of the traditional and historical meaning of the city defined by dense, contiguous, and continuous urban space due to the information revolution and the new society that emerged in the West. This view takes us back to the functionalist principles since the idea behind networks is nothing more than creating functional connections between different centres.

The core influence of the concept of modernization, encompassing both its positivist and liberal interpretations, stems from the underlying notion that traditional social structures and mechanisms of social control are undergoing fragmentation. In modern societies, the defining factors have shifted away from principles, values, and norms, leading to constant change, the ascendancy of instrumental rationality, and the erosion of absolute principles. Positivists held the belief that these transformative shifts would ultimately lead to a society governed by political engineers with a scientific approach. Meanwhile, liberals envisioned a transformation of society into a marketplace, where all goods and services would be priced based on their utility. (Haferkamp and Smelser, 1992, 1991).

The raised question is what is the fate of public space, which is at the centre of social connections? How will networked urban design confront the sharp crisis of social connections and its dominance, which leads to the disappearance of urban space and the marginalization of the local scale, in contrast to the interest in the regional scale? “And is the world heading towards a dystopian city characterized by accelerating inequality and injustice due to the contradictions and disparities of globalization?” These questions are raised by many theorists such as R. Petrella (1996) as well as R. Deutsche in *Evictions, Art and Spatial Politics* (1996), which refers to (Boys Town): “Post-modern’s valorisation of “fragmentation” and difference cancels the totality of late capitalist space and therefore jeopardizes the possibility of emancipatory struggles” (Deutsche, 1996). Figure 8.

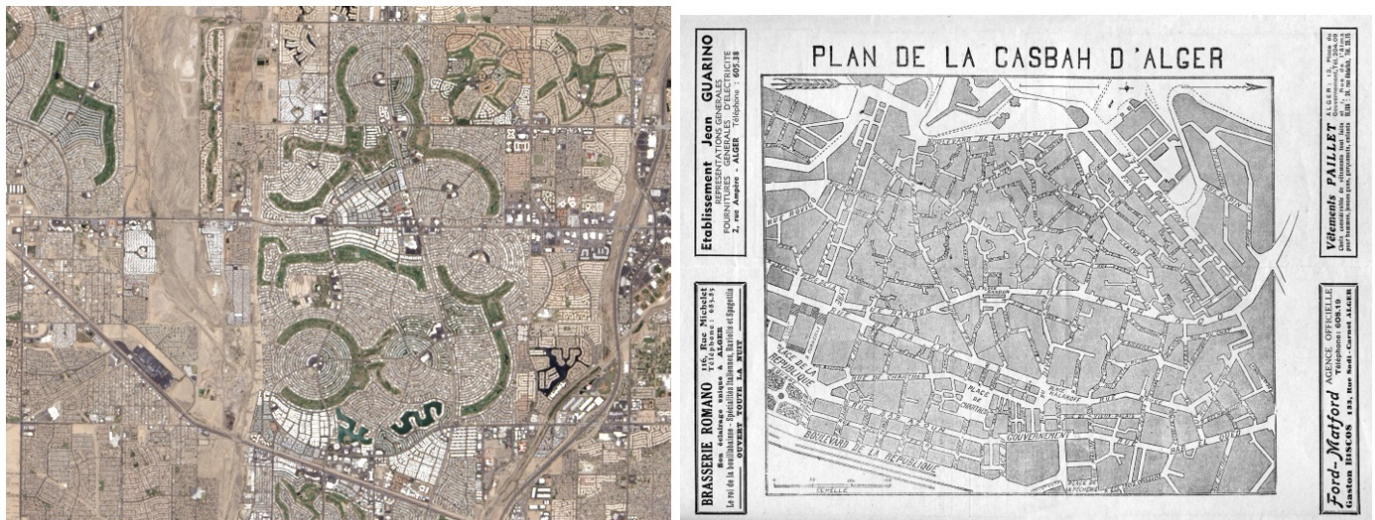


Fig. 8 Traditional/ Modern urban discontinuity.

1. Discriminatory model: psychological isolation and territorial isolation (Sun City, Arizona). Source/ (https://eoimages.gsfc.nasa.gov/images/imagerecords/89000/89363/suncity_oli_2016146_lrg.jpg)
2. Al-Djazair traditional urban fabric destroyed by the French military occupation (<https://www.neabeloued.fr/blog/public/plans/carte-casbah.jpg>)

Thus, enhancing fragmentation and diversity in postmodernity conceals the totality of capitalist space and thereby exposes the possibility of liberating conflicts. Petrella (1996) suggests that we have lost control of the rupture in the city as a coordinated system (space-time) due to the entry of regional multiplicity and the disappearance of the region, which has deprived the city of its memory... "...cities losing their space-time coherence as tradition and memory break-down under the influence of multi-territoriality and de-territoriality." Thus, today the problem of sustainable development in contemporary fragmented and dispersed cities is posed, as well as the problem of preserving historical centres due to these contradictory changes... That is, the reinforcement of fragmentation and difference in postmodernism conceals the totality of capitalist space and thus, exposes it to the risk of discontinuity in the current of deconstruction. In the context of postmodern thought and the importance of fragmentation and deconstruction, political and social factors had important effects in pushing architecture and architectural thought towards another intellectual slide (Al-Jadarji³, 1995). Thus, the deconstructive movement emerged with the emergence of Jacques Derrida's philosophy of absence, which created a revolution in modern philosophical currents (Derrida, 1977, 1979, 1982). The most important concepts of deconstruction are difference and displacement. The purpose of deconstruction is to displace philosophical categories (Nesbitt, 1995, p.36). Derrida holds that difference itself... is what makes possible the seeming priority of only one member of each pair (presence or absence)... Derrida believes that difference allows the priority of the phenomenon of one member of the binary (such as presence and absence...).

In conclusion, the theories regarding the emergence of discontinuity in Western urban design differed between the medieval city and the modern industrial or contemporary city. Discontinuity was built on an intellectual level that rejected all moral and symbolic determinants and everything that came with classicism. This was reflected in the city's composition, with the most significant discontinuities being the separation of functions (zoning), the separation of

geometric blocks, and the breaking of urban spatial links. This included the disappearance of the meaning of streets and places, and the detachment of buildings from the urban fabric (i.e., the destruction of traditional urban fabric). The community became alienated, suffering from a moral disconnect, as it lost its sense of place and control over it. The urban fabric became fragmented and dispersed, falling victim to the dissolution of its physical identity.

Despite postmodern attempts such as contextuality, textual and textual-interference, and the Collage City, postmodernism introduced the intellectual foundations of discontinuity through the introduction of ideas of meaning multiplicity, structure, and collage. The urban space remained threatened with discontinuity due to the emergence of other currents that called for disintegration or supported absolute diversity, while others declared the end and death of the traditional city. Today, various problems arise, including the problem of constant development and the preservation of the historical fabric.

4.2. The Contemporary Arab-Islamic Urban Design

The contemporary Arab-Islamic architecture emerged within a framework that appeared suitable for it, represented by the regionalism movement in the 1970s, which was a reaction to internationalism. This movement acquired a special meaning in Arab architecture, where the effect of modernity blended with the disruption from the past, along with the acceleration and increase in development (Mahdi, 1998, p. 35). The beginning of the Arab thought, which confronted Western European centrality in the field of architecture and art, dates back to the early 1940s. A study of the Arab mental structure revealed four orientations. The first is traditional and based on the absolute rejection of Western civilization and a return to Islamic sources as an expression of resistance. However, it remained on the margins of history (Benyoucef, 1999, p. 16). This trend believes that there is no way to adaptation except to cling to oneself, collide with the other, i.e., isolation, and self-closure. According to this trend, any endeavour to adapt and formalize the current state of affairs is viewed as a forsaking of the past, a clash with contemporaneity that remains on the surface, and a mere superficial association. Moreover, relinquishing the progressive nature of the present, along with its demands and principles, is seen as a formal attachment to the past (Iskandar, 1980, p. 219). This trend also denied urban heritage, as it adopted local rural mud architecture. Hassan Fathy was the pioneer of this trend in Egypt in 1924, who had the credit of conceiving architecture integration in the mid-1940s (Al-Jadarji, 1995).

The second trend was modernist and liberal, showing a Radical denial of traditions and the complete acceptance of modern Western civilisation. It sought complete integration and total assimilation into the other's culture, i.e., absolute alienation towards conformity with the other and separation from oneself (Al-Jadarji, 1995; Ibrahim, 1997). This trend adopted the Western and global architectural model as the result of architectural progress. Local designers such as Hisham Munir, Qahtan Awni, and Qahtan Madfai headed this movement to build modern Baghdad, neglecting the social demand and the satisfaction of the local need.



Fig. 9. Baghdad Municipality Hisham Munir renovation, 1978 (<https://ina.iq/eng/11746-baghdad-municipality-invites-saudi-companies-to-implement-the-electronic-automation.html>)



Fig. 10. a) Mustansiriya University created by the Abbasside Califate Al-Mustansir. (https://en.wikipedia.org/wiki/Mustansiriya_Madrasah.jpg) b) Campus of Mustansiriya, Qahtan Awni in 1968 (<https://www.sosbrutalism.org/cms/18861248>)

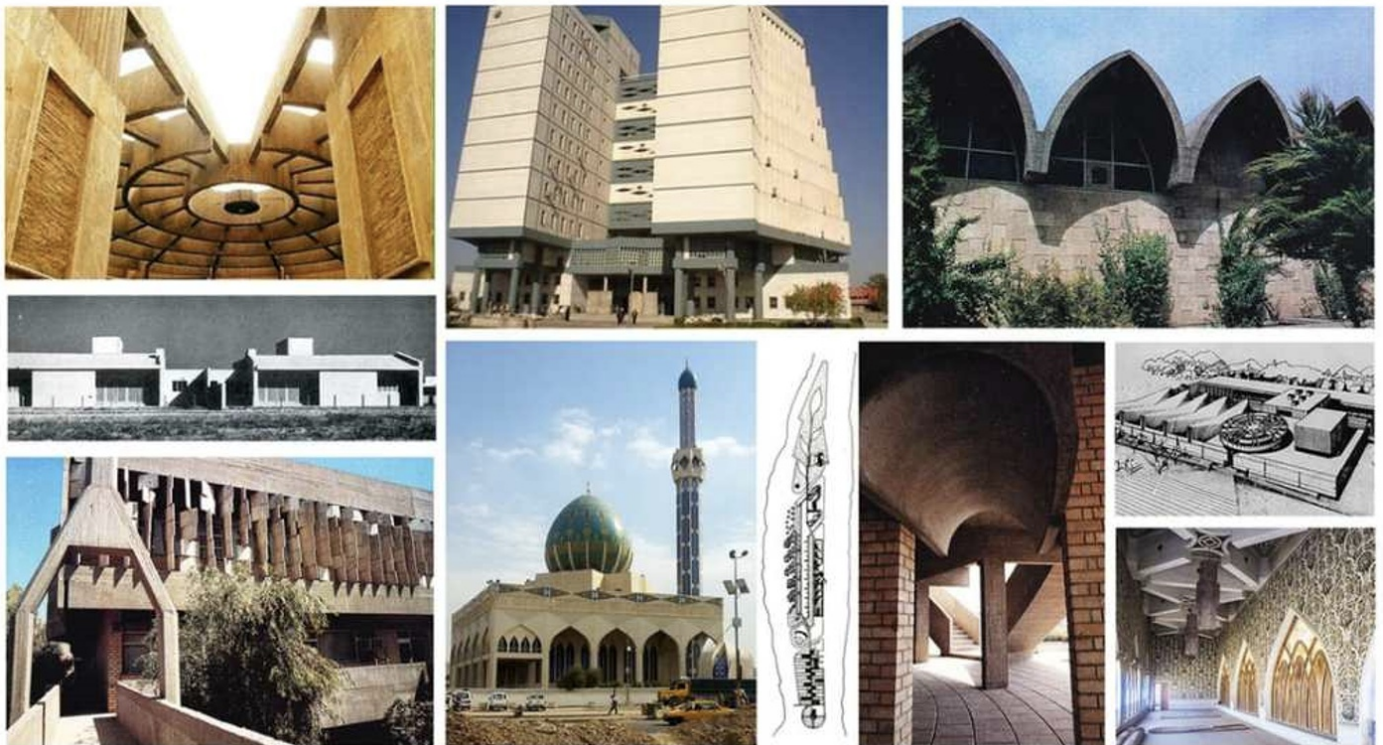


Fig. 11. The works of Dr Qahtan Al-Madfa'i in Iraq (<https://tamayouz-award.com/iraqi-architect-dr-kahtan-al-madfa-i-receives-the-tamayouz-lifetime-achievement-award-for-architecture-2016/>)



Fig. 12. The ancient Baghdad city's landscape, 10th century, the peak of the Abbasid Califate (<https://www.theguardian.com/cities/2016/mar/16/story-cities-day-3-baghdad-iraq-world-civilisation>) and Contemporary urban landscape, 2016 (<https://wardheernews.com/wp-content/uploads/2016/09/Iraq.jpg>)

Alongside these two extremist approaches, there are two other approaches. The first is the reformist approach, which called for a return to the past and progress through social and cultural revolutions without considering the historical context of concepts and methods of integrating them into social and cultural dynamics. In this ideal context, concepts are stripped of any philosophical aspect and ideological background (Benyoucef, 1999). The second approach praised modernity in the form of harmony between authenticity and modernity. This approach shifted objective thematic models, but in a superficial and artificial way, without considering the historical, philosophical, and ideological dimensions of these concepts. These approaches have led to *negligence in architectural pollution* and the imitation of heritage landmarks,

where negative architectural cases were proposed, leading to more negative effects than the impacts of other trends (Al-Jadarji, 1995). The architectural pollution is a discontinuity due to free selectivity.

These positions have actually had a direct impact on thought, and consciousness has been divided into two opposing and conflicting parts. It directed the work of thought, determined its areas, and evaluated its results. The conflict is between the culture of attraction, polarization, and centralization, and the culture of rejection, exclusion, and marginalization. The first trend coincides with the other, thinks about it and adopts its problematic cultural concepts, its slogans and concepts, while the second trend coincides with itself and adheres to itself in a kind of absolute abstraction. The first choice, even if it led to modernization, does not contribute as an active part but is a reactive party, receiving what reaches it without the possibility of a real representation (Ibrahim, 1998, pp. 7-8).

Western centralization launched a confident colonial movement on the Islamic Arab world represented by cultural colonisation after military colonization and its effects and impressions, whether at the architectural level or at the urban level (the colonial style) or at the level of the emerging or recipient architect's personality. Afif Al-Bahansi confirmed that the speed of economic, demographic, and social transformation has led to the intensification and legislation of urban modernity... *"We did not realize its dangers" that led to the separation (discontinuity) from our identity, traditions, spiritual and material needs* (Al-Bahansi, 1998, Al-Khafaji and Ziyani, 1999). Khaled analyses in his book *'Migration in Art'* the phenomenon of the trend towards the West in Arab literature and the collision with it embodied in "the relationship between the self and the other in the form of inequality, thus placing the West at the forefront as a model and goal..." This has put the contemporary Arab artist in two opposing positions: 1) the continuous pursuit of this "superior other" and 2) the fierce and violent conflict. However, in all cases, the "other" has found effective and influential existence as one of the important focuses (Khaled, 1998, p. 274).

Contemporary Arab architecture and urban design suffer from the impact of these extreme attitudes, whether related to the global architectural heritage or the local architectural heritage, which represents a culture of conformity with the other or self-closures. Matching a colonial network with a traditional network, both of which are embodied in discontinuity at different levels. This discontinuity at the level of urban design is represented in the cohabitation and juxtaposition of two different urban systems, traditional and contemporary, which acquire weight that threatens the old traditional nucleus of the city itself. This juxtaposition has produced a confrontation and rupture that is not without fundamental problems for the future of historic neighbourhoods and the balance of the city as a whole, due to the dominance of colonialism described as an eclipse or obscuration of civilization, a phenomenon that all Islamic cities have experienced. This discontinuity was characterised by the juxtaposition of two economic systems that highlighted the contemporary over the traditional and the new over the old, leading to the decline and disappearance of the traditional city, which is often marginalised today, posing the problem of the survival of these cities.

Conclusion

This paper explained the concept discontinuity in linguistic and terminological and it shown that there is an overlap in

meanings. The concept of discontinuity appeared in both positive and negative meanings. Discontinuity is positive if it is based on intellectual dialogue and understanding and aims for change towards the better and allows procedural separation in order to understand and separate things. In architecture, this discontinuity aims to create ambiguity for the pleasure of the recipient. Negative discontinuity occurs when there is extremism in thought and exaggeration in the means of achieving the resulting ideas. Studies have shown that there is a discontinuity in the structure of phenomena represented by the dichotomy of higher patterns and the constant conflict between them. Negative discontinuity in the philosophy of *situationalism* called for radical splintering and neglected psychological, social, and ideological meanings and connotations, as it did in deconstructionist philosophy when it neglected and cut off the relationship between the product and the designer and went too far in the absence of meaning through the abundance of the signifier.

Another aspect of the concept of discontinuity appeared, which is the nature of interruption: moral and material interruption. Moral discontinuity is manifested in the absence of a clear relationship between the signifier and the signified or in the singularity of the reference. Material discontinuity is manifested in the breakdown of relationships at the level of the signifier structure. Architectural and urban studies have shown the existence of this classification, where three levels of discontinuity appeared: discontinuity at the level of thought (intellectual interruption), discontinuity at the level of meaning (moral interruption), and discontinuity at the level of masses (material discontinuity or breakage). On the other hand, there have been different approaches regarding the emergence of the discontinuity in Western urban design between the medieval city and the modern industrial or contemporary city.

However, there is an agreement on the existence of discontinuity at the level of contemporary Arab-Islamic thought, represented by two opposing positions: the continuous pursuit of the other and the closure on the self. These positions are embodied in the discontinuity at the level of urban design in the cohabitation and the juxtaposition of two different urban structures: the traditional and the contemporary ones. These studies revealed a debate about the meaning and manifestations of the break, and its impact on contemporary urban design. It specifically highlights the dilemma faced by modern Arab culture, which grapples with the tension between its similarity to Western culture and the need for rooted differences. In summary, extreme position stems from a desire for social control. This is the cause of alienation to social and economic modernisation as well as the difference between the concepts of modernity and modernisation.

Discontinuity in urban design refers to a lack of harmony or coherence among different elements of the built environment in a particular urban area. This could be due to planning decisions, differing architectural styles, or a lack of consideration for the overall aesthetic of the space. Discontinuity can lead to a sense of disorder and confusion for residents and visitors, and may affect the functionality of the area, leading to challenges in navigation and accessibility. To address discontinuity, urban designers may focus on creating a cohesive vision for the space that takes into account the diverse elements present and seeks to bring them together into a unified whole. This can involve the use of specific architectural motifs, colour schemes, and other design elements to create a sense of continuity and coherence throughout the space.

Footnotes

¹ May's movement is a student demonstration that denounced the French policy at the time (Chevalier, 1978).

² This margin is mentioned to emphasize the importance of extreme positions in causing discontinuity, where the wisdom of transcending boundaries in invention and seeking liberation from the constraints of nature and "human laws" is highlighted. Even if the ability to violate them exists, as was the case with Icarus, the son of Daedalus, who built the maze and was also the mythological father of architects. Daedalus gave his son the ability to violate human laws through invention and liberation from the pressures of nature. However, he did not forget to warn him of the existence of extreme [deadly] limits, where he should not fly too high near the sun so that the wax on his wings would not melt, and he should not fly near the sea so that the water does not weigh down his feathers.

³ Rif'at Chadirji or Al-Jadarji.

References

- Abbas, S. S., Belmessaoud, B. (2009). Discontinuity As Catastrophic Event in Urban Design. *Iraqi Journal of Architecture and Planning* 4(1) DOI: [10.36041/iqjap.v4i1.389](https://doi.org/10.36041/iqjap.v4i1.389)
- Abel, C. (1987). *The architecture of diversity*. Academy Press.
- Abel, C. (1997). *Architecture and Identity*. New York: Routledge.
- Abel, C. (1997). *Architecture, Technology and Process*. Architectural Press
- Affaya, M. (1998). *The Philosophy of Language: Its Conceptual Background and Semantic Applications*. Cairo, Egypt: Al-Maaref.
- Al Khatib, R. (1371). *Al-Mawrid: A Modern Arabic-English Dictionary*. Beirut: Dar El-Ilm Lilmalayin.
- Al Sabek. (1985). *Dictionary of Modern Arabic*. Cairo: Dar El Maaref.
- Al-Bahansi, A. (1998). *Identity Crisis in Arab Islamic Architecture*. Dar Al-Afaq Al-Jadida.
- Al-Jadarji, R. (1995). *Hiwar fi bouniyawiyat al-fen wa al- 'imara*[Dialogue in the structuralism of art and architecture]. Riyad El Rayes Books and Publishing
- Al-Khafaji, M., & Ziyani, M. (1999). *Urban Development and Identity Crisis in the Arab World: Towards a Critique of the Western Model*. Arab Cultural Centre.
- Al-Zahrani, H. (2000). Urban design in the postmodern era: the case of Jeddah. *Ain Shams Engineering Journal*, 1(2), 141-153.
- Al-Zahrani, M. (2000). *The Text and the Other: Theoretical and Critical Studies in the Literature of Otherness* Riyadh, Saudi Arabia: Al-Saqi.
- Amelung, B. (2015). Berlin: *The Architecture Guide*. DOM Publishers.
- Batty, M. (1971). Modelling Cities as Dynamic Systems. *Nature*, 231: 425-428
- Belmessaoud-B., B. (2022). Space Syntax Theory Identifies the Ethical Reversal Trend of the Overwhelmed Mādina of Al-Jaza'ir Urban Morphology. *Mediterr. Archaeol. Archaeom.*, 22, 155–182.
- Belmessaoud-B., B. (2019) Contemporary urban landscape cacography: an ethical cacophony. XVIIth International Forum of Studies "Le Vie dei Mercanti" WORLD HERITAGE and LEGACY Culture | Creativity | Contamination. Naples,

- Capri. <http://www.leviedeimercanti.it/proceedings-xvii-forum/>
- Belmessoud, B. (2010). Athar al-inkita' 'ala al-madina al-taklidiya: dirassa tahlilya li-kassabat al-Jazair bi-isti'mal nadhariyat al-karitha. [The impacts of discontinuity on the traditional city: An analytical study of Al-Jazair Qasbah using Catastrophe theory]. *Revue Sciences et Technologie D*, N° 32,5-15, <http://revue.umc.edu.dz/index.php/d/article/view/440>
 - Belmessoud, B. (2002). Discontinuity in urban design. An Analytical Study using Catastrophe Theory and Space Syntax. Case of Algiers Casbah between 1830-2001. Unpublished MSc Thesis. Technology University of Baghdad, Iraq.
 - Benyoucef, M. (1999). Fen al-bina'a wa al-hadhara al-islamiya. [Art of building and Islamic civilization]. Algiers: Editions En-Nahdha.
 - Broadbent, M. (1990). *History and Theory of Architecture*. London: Routledge.
 - Cao, T. (1978). The urban system and the integration of the social and economic organization of cities. In S. S. Fainstein & S. Campbell (Eds.) *Readings in Urban Theory* (pp. 62-63). Oxford: Blackwell.
 - Casti, J., Swain, H. (1976). Catastrophe theory and urban processes. In: Cea, J. (eds) *Optimization Techniques Modeling and Optimization in the Service of Man Part 1*. Optimization Techniques 1975. Lecture Notes in Computer Science, vol 40. Springer, Berlin, Heidelberg. https://doi.org/10.1007/3-540-07622-0_483
 - Ceccarelli, P. (2019). Discontinuity in Contemporary City. ILAUD / WORKING PAPERS N.1
 - Chevallier, J. (1978). Le modèle centre/périphérie dans l'analyse politique. Chevallier J., éd. *Centre, périphérie, territoire*. Paris: PUF
 - Chevallier, R. (1978). *The Medieval World*. Oxford University Press.
 - Choay, F. (1997). *The rule and the model: on the theory of architecture and urbanism*. MIT Press.
 - Cohen, J. (1986). *Deconstructive criticism*. University of Nebraska Press.
 - Colquhoun, A. (1985). *Essays in architecture*. MIT Press.
 - Dendinos, D. S. (1987). The catastrophic: Theory and its applications. *The Journal of General Psychology*, 114(1), 83-94.
 - Derrida, J. (1976). *Of Grammatology*. Johns Hopkins University Press.
 - Derrida, J. (1978). *Writing and Difference*. University of Chicago Press.
 - Derrida, J. (1982). *Margins of Philosophy*. University of Chicago Press.
 - Deutsche, R. (1996). *Evictions: Art and Spatial Politics*. Cambridge: Massachusetts Institute of Technology.
 - Foucault, M. (1987). The ethic of care for the self as a practice of freedom. In P. Rabinow (Ed.) *Ethics: Subjectivity and truth* (Vol. 1, pp. 1-20). The New Press.
 - Fukuyama, F. (1992). *The End of History and the Last Man* New York: Free Press.
 - Giddens, A. (1991). *Modernity and Self-Identity*, Polity Press.
 - Harb, A. (1994). *Al-Muqawwama al-Thaqafiyya fi Lubnan wa Filastin [Cultural Resistance in Lebanon and Palestine]* Beirut: Dar al-Jadid.
 - Harb, H. (1994). *Al-ibda' wa al mantaq [Creativity and logic]*. Beirut: Dar al-Thaqafa.
 - Harb, J. N. (1994). *From tradition to modernity: the phenomenon of the built environment* Dar al-Kitab al-Lubnani.

- Harb, M. (1994). *Nietzsche and the End of Metaphysics* Beirut: Dar al-Tanweer.
- Haferkamp, H. and Smelser, N. J. editors (1992, 1991). *Social Change and Modernity*. Berkeley: University of California Press. <http://ark.cdlib.org/ark:/13030/ft6000078s/>
- Ibrahim, A. (1997). *Al-Taqaddum al-Insani: Manhaj Jadid li-Tafsir al-Tarikh*[*Human Progress: A New Approach to Interpreting History*]. Cairo: Al-Hilal Publishing.
- Ibrahim, A. (1997). *Nahwa falsafat al-'imara al-Islamiya. [Towards a philosophy of Islamic architecture]*.Cairo: Dar Al-Maaref.
- Iskandar, A. (1980). *Saddam Hussein mounadhilan wa moufakiran wa insanan [The Fighter, the Thinker and the Man]* Paris: Hachette Realities.
- Jencks, C. (1985). *The Language of Post-Modern Architecture*(3rd ed.). Academy Editions.
- Jencks, C. (1988). *What is post-modernism?* Academy Press.
- Jencks, C. (1997). *The new paradigm in architecture: The language of post-modernism* Yale University Press.
- Kelbaugh, D. S. (2013). Critical regionalism: an architecture of place. In *The urban design reader* (pp. 316-326). Routledge.
- Khaled, D. (1998). *Migration in Art*. The Center for Arab Unity Studies.
- Kropf, K. (2004). *Urban design as public policy: practical methods for improving cities*. Routledge.
- Lefebvre, H. (1983). Penser à contre-courant?. In: *Autogestions*, NS N°14. Du muet au parlant. pp. 99-102.DOI: <https://doi.org/10.3406/autog.1983.1564>
- Lloyd, C. (2006). Analysing Urban Systems: Application of Catastrophe Theory. *Transactions of the Institute of British Geographers*, 11(1), 44-63.
- Loschak, J. P. (1978). *The medieval city*. In R. Chevallier (Ed.). *The Medieval World* (pp. 187-188). Oxford University Press.
- Loschak, V. (1978). *The structure of urban space*. In R. Chevallier (Ed.) *Urban morphology: An introduction to the study of the physical form of cities*. Methuen. pp. 185-202.
- Mahdi, H. (1998). *العامة الحضرية العربية في مرحلة التعااصر [Contemporary Arab urban architecture]*. Baghdad: Al-Mada.
- Madanipour, A. (1996). *Design of urban space: an inquiry into a socio-spatial process*. New York: Wiley.
- Morris, A. E. J. (1975). *History of urban form: before the industrial revolution* Wiley.
- Morris, I. (1979). *Archaeology as Cultural History: Words and Things in Iron Age Greece* Blackwell.
- Morris, J. (1979). Goodbye, Mr. Socialism. *National Review*, 31(18), VIII-XII.
- Morris, W. (1979). *The roots of the modernist dilemma* University of Chicago Press.
- Mumford, L. (1964). *The city in history: Its origins, its transformations, and its prospects* Houghton Mifflin.
- Nesbitt, K. (1995). *Theorizing a new agenda for architecture: an anthology of architectural theory 1965-1995* Princeton Architectural Press.
- Petrella, R. (1996). La ville en rupture: urbanisme, développement et coopération. *Urbanisme*, (299), 6-11.
- Pinder, Isobel (2017). Form or function? towards a typology of Augustan city walls in roman Italy. *Journal of the American Heart Association*-Vol.4, (3).
- Porphyrios, D. (1995). *Sources of modern eclecticism: a dialogue*. Academy Press.

- Prost, R. (1992). *Philosophy and design: from engineering to architecture*. Editions de la Villette.
- Pumain, D. (2006). A Catastrophe Theory Approach to Urban Modelling. In *Spatial Models and GIS* (pp. 59-77). Springer, Dordrecht.
- Riha, J. R. (1985). Catastrophe Theory and the Urban Environment. *Geographical Analysis*, 17(1), 45-59.
- Safadi, N. (1990). *Al-Inkita'a wa Al-Tanmiya [Discontinuity and Development]*. Beirut: Dar al-Tali'a.
- Sassen Saskia. 1991. *The Global City*. Princeton, NJ: Princeton University Press.
- Shorter Oxford English Dictionary. (1965). Oxford: Clarendon Press.
- Schulz, N.C. (1971) *Existence Space & Architecture*. Studio Vista, Praeger Publishers Inc., London.
- Smith, F. J. (1977). *Future shock*. Bantam Books.
- Stover, Ch. and Weisstein, E. W. "Discontinuity." From *MathWorld*--A Wolfram Web Resource. <https://mathworld.wolfram.com/Discontinuity.html>
- Sugrue, T. J. (2014). *The origins of the urban crisis: race and inequality in post-war Detroit*. Princeton University Press.
- Tafuri, M. (1979). *Architecture and Utopia: Design and Capitalist Development*. The MIT Press.
- Talbi M. (1998). *Plaidoyer pour un Islam modern*. Paris: Desclée de Brouwer
- Thom R. (1972). *Stabilité structurelle et Morphogénèse*. Reading, Mass. Benjamin, Paris: Éditions de la Bibliothèque de la Sorbonne.
- Wilson AG (1981). *Catastrophe Theory and Bifurcation: Applications to Urban and Regional Systems* University of California Press, Berkeley, CA
- Wright, F. L. (1970). *The Future of Architecture*. New American Library
- Yiftachel, O. (2017). Urban marginality under advanced marginality: from social segregation to spatial abjection. *The city* (pp. 45-62). Routledge.
- Zeeman, E. C. (1963). *Seminar on Combinatorial Topology*. Institut Des Hautes Études Scientifiques. University of Warwick.
- Zeeman, E. C. (1977). *Catastrophe theory: Selected papers, 1972–1977*. Addison-Wesley.