Post Reality and Virtual Reality in Heterotopic and Heterochronic Spaces

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Abstract

Heterotopias and heterochronies are defined in Foucault's controversial yet inspirational text. According to him, heterotopias are a realm that relates to tradition or every day contexts, has various, fragmented, or even irreconcilable meanings, which is a rich concept in urban planning and means exactly "other places," Heterochronies on the other hand are locations that piles up time, as well as create temporary spatial formations.

This article views cyberspaces as representations of urban areas that contain the accumulation of time and ephemerality. In order to determine how well projects and surroundings reflect these occurrences, it evaluates them generally and in accordance with the principles. It's an overview of cyberspace as a cutting-edge technology with potential to advance different industries and, via virtual reality, expand the physical world. The paper examines the connection of experience of cyberspace as a heterotopia and heterochronic space.

Its findings reveal eight fundamental principles, which stand for these three, enabling the description of cyberspace as a variation in time and space.

Keywords: Reality, Virtual reality, Heterotopic, and Heterochronic.

Introduction

Since it was first used by Foucault in the late 1960s, the phrase "Heterotopia" has had a significant impact on architectural and urban thought. However, it has also remained a subject of discussion and confusion in the final decades of the 20th century. In fact, there was a heated debate in architecture and urbanism about the transformation of public space. On the one hand, there were discourses bemoaning the "end of public space", for example Sorkin (1992), and on the other, there were opposing viewpoints that favored new types of public space that were located in private spaces for communal use (such as shopping centers or sports facilities) or in alternative spaces like wastelands or parking lots for example (Chase, et al., 1999).

The modern urban development's reveal a significant redrawing of the boundaries between public and private spaces, bringing to the fore a similarly perilous and rich ground of situations that are not just hybrid but rather resist an easy definition in these terms. Foucault's concept of heterotopia can offer fresh insights into this perilous environments. The idea appears to present a chance to summarize and refocus the current discussion (Dehaene,et al., 2008:1), s while linking reality with virtual reality.

This paper aims to explore and understand the virtual space in the cyberspace as a future heterotopic and heterochronic space.it is aimed to exemplify how the concepts advocated by Foucault can be extended, enhanced and improved. In other words, in order to think more about the cyberspace, which is the space of the future or the post heterotopic and heterochronic space characterized as different from the existing one.

Theoretical Ideas

Heterotopia

The concepts of utopia and dystopia serve as a model for heterotopia. The prefix hetero, is derived from the Ancient Greek o (héteros, meaning 'other, another, different') and is coupled with the Greek morpheme 'place' to imply 'other place', is a prefix that means the 'other (Foucault et al., 1954:180). Heterotopia, which is a rich notion in urban design and literally means 'other places', is a world that is off-center in relation to typical or daily environments and has many, fragmented, or even incompatible meanings. The heterotopias are found in our modern world's museums, theme parks, shopping centers, vacation resorts, gated communities, wellness hotels, and outdoor markets (Fig. 1: Giambattista Nolli's,1748). The fragmentary map of Rome from the 18th century shows the Pantheon to the East and the churches of Borromini prominently surrounding the Piazza Navona.

The interiors of churches are depicted as cavities within a solid architectural mass: an excellent graphic portrayal of the unclear status of these individuals within the metropolis. 'Sacred' areas that transcend simple private-public/black-white categorization of the map's logic and the remains of a stadium and a circus were used to build the Piazza Navona. Emperor Domitian shows how heterotopias can transform over time into public areas. This interpretation completely ignores a crucial detail. The interiors of the churches, which are left white, are heterotopian rather than public or private. The required connection and limited overlap between public space and heterotopian space is what this map so beautifully illustrates. Spaces that are heterotopian must be shared or collaborative. Their heterotopian nature was dependent on a precise opening and closing mechanism, as Foucault stated. The difference between shutting and opening is that closing refers to the exclusion of the public, the establishment of otherness, and a closure with respect to public space (Dehaene, et al., 2008:6).

The Concept of Heterotopia

According to Michel Foucault, heterotopias are "real and effective spaces which are outlined in the institution of societies, but constitute a counter-arrangement of attractively realized utopia, in which all the real arrangements that are typically found within a society are simultaneously represented, challenged, and overturned" (Foucault, 1985:12). As a result, heterotopia is a kind of location that is both outside of all the locations and yet is truly localizable. Institutionalized heterotopias include cemeteries, jails, museums, libraries, and even retail centers.

The focus of Foucault's argument is that the outside world is where we exist and where we emerge from. People and things can be found in this heterogeneous area, but only through a system of interactions that cannot be equated in any manner. Utopias are configurations without actual space and, as a result, generally have a direct or inverse analogy with the actual space of society (Foucault, 1985:11). They are areas that, by definition, are not real (literally, there is no place there), and they either reflect civilization at its best or at its worst. On the other hand, heterotopias relate to all other locations while also contradicting them. For the individual in a state of crisis with society or the environment, Foucault describes heterotopias of crisis as hallowed or prohibited areas in primitive cultures (Casey, 1997). (Calvino says that it is the "power of juxtaposing in a single real space different spaces and locations that are incompatible with each other." (1997:1).

The Persians' paradise[1] garden served as a sacred space wherein its four quadrants contained the four corners of the world. The fountain in the garden's middle represented the world's centre. By extension, the carpet was transformed into a little moving garden in space. The garden stands for the entirety of the globe and a universal heterotopia as it is the tiniest component of it (Fig.2). Heteroptopias always assume an opening and closing system that isolates them while also making them permeable. Typically, one does not voluntarily enter a heterotopia. In a barrack or a prison, one is compelled to live; in a cloister or monastery, one must undergo some sort of purification ceremony in order to be allowed. In the light of this

discussion, it's possible that the most important principle of heterotopias that which showne in, (Diagram 1).

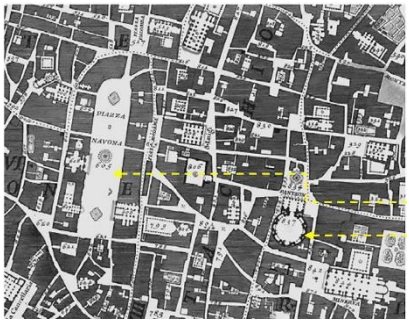

Fig.1: Fragment of the 18th century Map of Rome by Giambattista Nolli Source: (1748) Source:Dolori, 1748:5.

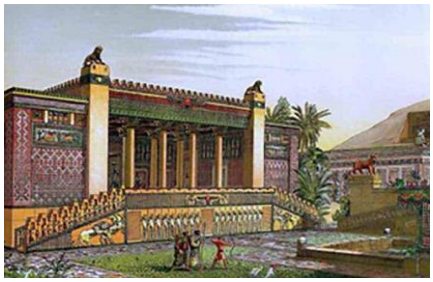

Fig.2: rGadens outside of the Palace of Darius I of Persia in Persepolis, an example of Achaemenid paradise gardens source: Source: ChipiezA, 2019.

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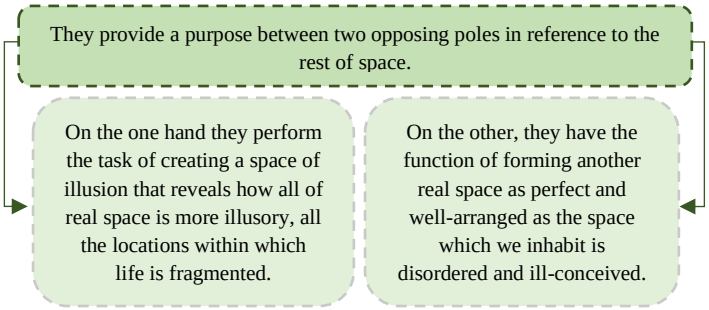


Diagram 1: most important principle of heterotopias Source: Calvino, 1997:2;Author

Several of the Puritan colonies that the English established in America during the 17th century was the ideal era for regulating both space and time in terms of village organization and people's daily lives. Concerns concerning time, in particular time gaps, breaks, accumulations, and transitions are intimately related to heterotopias. Heterotopic spaces relate to temporal formations in various circumstances between the eternal and the transient. There is no one type of heterotopia; its functions are variable; and it can bring together disparate, incompatible spaces. They typically have an opening-closing system and are not open to the public like public spaces. These are just a few of the heterotopias' guiding principles, according to Foucault's highly contentious book "Of Other Spaces". They always have a purpose in relation to outdoor areas (Foucault, 1986:24). It is somehow still excluded even when believed that it has entered heterotopia. These "neo-urbanist" experiments use morphology to give the appearance of mutual interactions, but they do so in a way that suspends, neutralizes, or inverts the set of links that they have created, reflected, or mirrored.

Heterotopia as a strategy to reclaim places of otherness

One can sense of how broad the concept is when looking at all the examples given, including the school, military service, honeymoon, old people’s homes, psychiatric institutions, prisons, cemeteries, theatres and cinemas, libraries and museums, fairs and carnivals, holiday camps, saunas, motels, the Jesuit colonies, and the ship. Heterotopia can be thought of as being at crossroads of the conceptual flight lines that form the public space in the present by means of Tthe reinvention of the everyday: the ordinary and the spectacular. The reimagining of the discourse on the ordinary, which generally coincides with the English translation of Lefebvre and De Cauter is motivated by a dissatisfaction with both the elitism of modern neo-avant-garde architecture and the crass commercialization of popular culture (De Cauter, 2004;Dehaene, 2008,). However, by highlighting the exceptional important potential, the discourse on the everyday seeks to balance Foucault's focus on the extraordinary and the emergence of

Heterotopia as a strategy to reclaim places of otherness of these matters (McLeod, 1996:25) as shown below:

1-The polis: the ideal of the city-state–heterotopias belong to the inclusive character of the polis. Tries to realize the good life via equilibrium between oikos (private sphere, household, hence economy) and agora (public sphere, the place of politics).

2-'Economization' is the erosion of the distinction between these constitutive terms of the polis, as is clear in the term 'privatization'. It is a sure sign of a crisis.

3- The rise of the term 'governance' instead of 'government' is a symptom of this crisis, and 'management' its apologetics.

4- In the 'post-civil society', the heterotopia resurfaces as a strategy to reclaim places of otherness on the inside of an economized 'public' life.

5- The rise of the network society: place and non-place. A new field was created by Foucault's concept, which provided insight into a method of arranging space that was both antiquated and contemporary.

In the opening of his talk, Foucault alluded to the evolution of space and specifically mentioned the emergence of network space: the space of Cartesian extension in early modernity following the hierarchical space of the Middle Ages and the Cosmological theory, the third stage is the Medieval space and last the "space of emplacement,[2]" the grid, or the network. The history of space can be traced back to what is shown in the Table 1.

Table 1: Foucault's short history of space
Source: Foucault, 1984; Author

The middle Ages	Hierarchic ensemble of places
	Sacred places
	Profane places
	Protected places
	Open spaces without defence
	Urban places
	Rural places (so far for the real life of humans).
Cosmological theory	super-celestial places as opposed to the celestial
	Celestial place was in turn opposed to the terrestrial place.
	places where things found themselves placed because they had been violently displaced
	Places where things found their emplacement and natural rest.
Medieval space	space of localization with Galileo
	Infinite and infinitely open space.
	Place of a thing was nothing but a point in its movement, just as the rest of a thing was only its movement indefinitely slowed down.
	Extension supplanted localization.
Today Emplacement	The emplacement 6 substitutes extension, which itself had replaced localization.
	The emplacement is defined by relations of proximity between points or elements; formally, we can describe these relations as series, trees, or grids.

Difference between Utopias and Heterotopia

The speaker at this time must be in outer space (Foucault, 2008:29). The environment in which we exist, which pulls us out of ourselves, in which our lives, our time, and our history are shredded, the environment that tortures and consumes us, is also a diverse environment in and of itself. But out of all of these sites, it's the ones that have the peculiar feature of being related to all the others in a way that suspends, neutralizes, or inverts the set of relationships that are denoted, mirrored, or reflected by them.

There are two basic categories of these 'spaces', as it were, that connect all the others but contradict all the other emplacements (Danani, 2014:8;Foucault, 2008:30). They are utopias and heterotopias. When it comes to Utopias (Emplacements) there is emplacements with no real place, and emplacements that have a general relation of direct or inverted analogy with the real space of society. It is society itself perfected: unreal spaces. When it comes to Heterotopias (Counter-Emplacements) these are in all civilizations, real places, effective places, and places that are written into the institution of society itself, as illustrated in Table 2. Between utopias and these absolutely other emplacements, and the heterotopias, there might be a sort of mixed, in-between experience, which would be the mirror. A mirror can represent both the heterotopic space and the utopian space as shown in the Table 3 below (Foucault, 2004:59).

Table 2: Different between utopias and heterotopias
Source: Foucault, 2004; Author

Utopias (Emplacements).	**Emplacements with no real place.**
	They are emplacements that have a general relation of direct or inverted analogy with the real space of society.
	It is society itself perfected
	Unreal spaces.
Heterotopias (Counter-Emplacements).	In all civilization,
	Real places,
	Effective places,
	Places that are written into the institution of society itself,
	Counter-emplacements,
	Effectively realized utopias in which the real emplacements,
	Can be found within culture,
	Simultaneously represented,
	Contested and inverted;
	A kind of places that are outside all places,
	Localizable.
	These places are absolutely other than all the emplacements that they reflect

Table 3: Difference between utopias and heterotopias
Source: Foucault, 2004; Author

The mirror is an utopia.	But it is also a heterotopia
1. Place without place.	1. It exerts on the place I occupy a sort of return effect.
2. Unreal space that virtually opens up behind the surface.	2. Virtual space that is on the other side of the looking glass.
3. I am over there, there where I am not, a sort of shadow that gives me my own visibility.	3. I come back towards myself and I begin again to direct my eyes towards myself and to reconstitute myself there where I am.
4. See myself there where I am absent.	4. It is starting from the mirror that I discover my absence in the place where I am, since I see myself over there.
5. Utopia of the mirror.	5. Mirror does really exist.

Principles of heterotopia

Foucault (1986) lays out six principles of heterotopias wherein he provides real world examples (Hutchings, et al., 2016:2)

First principle:

A basic tenet is that every culture in the world presumably has some degree of heterotopia. That holds true for every human group. However, heterotopias manifest in a wide

range of ways, thus it's possible that there isn't a single heterotopia that is completely universal. However, they can be divided into two main categories:

- Heterotopias of crisis: These are intended for those who, in connection with the society and the human surroundings where they reside, are in a crisis; these are privileged, sacred, or forbidden areas (adolescents, pregnant women and the elderly). Examples include the 19th Century boarding school, military service for young men, and the 'honeymoon trip'.
- Heterotopias of deviation: These are places where we put people whose actions deviates from the normal. Examples include rest homes, mental hospitals and jails. The retirement home represents both types of above crisis and deviation.

- Old age = crisis
- Idleness = deviation

In conclusion, the first principle is that the heterotopias represent reality. Utopias are the unreal. Example: The mirror. (Fig.5) "I believe that between utopias and these quite other sites, these heterotopias, there might be a sort of mixed, joint experience, which would be the mirror." (Patni, 2009: page number)

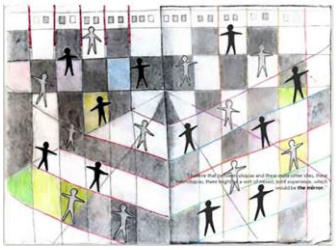


Fig. 5: Title?
Source: (Patni, 2009)

Second principle:

Over the course of its history, a society can alter the way that an existing heterotopia functions. This is because each heterotopia has a specific and established function within a society, and the same heterotopia can have different functions depending on the synchrony of the culture in which it is present. In conclusion, the second principle is that the societies may manipulate heterotopias and change how they operate. For instance, a cemetery (Diagram 2).

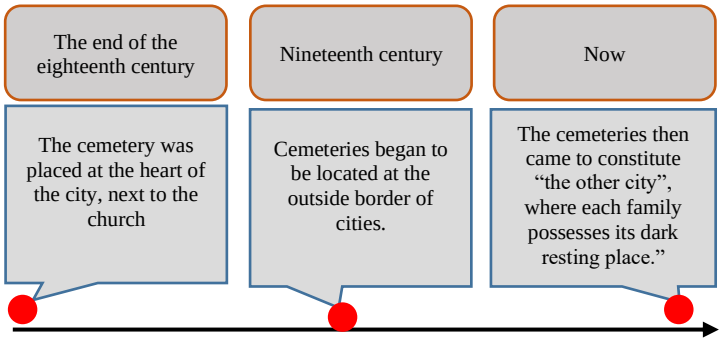


Diagram 2: the cemetery over the course of its history
Source: Charlotte, 2010.

Third principle:

According to Foucault Heterotopia has the ability to juxtaposition different locations and emplacements that are incompatible with one another in a single physical location. Thus, the cinema is a very strange rectangular room where, on a two-dimensional screen, one sees the projection of a three-dimensional space; similarly, the theatre brings to the rectangle of the stage a complete series of places that are alien to one another (Foucault, 2004).

Fourth principle:

Heterotopias are frequently connected to time-slices, which means that they open into what might be referred to as hetero-chronisms for the sake of symmetry. When people discover themselves in a sort of extreme breach with their customary time, the heterotopia starts to function properly. The idea of collecting everything, the desire to create a sort of general archive, the desire to contain all times, all epochs, all forms, all tastes, and the idea of creating a place of all times that is itself outside of time are examples of heterotopias in which time accumulates indefinitely. There are two examples of these heterotopias: the heterotopias of indefinite accumulation of time that include museums and libraries and temporal heterotopia. For example, the festival and the circus.

Fifth principle:

Heterotopias always assume an opening and closing system that isolates them while also making them permeable. A heterotopian location is generally not accessible. One must either be restrained, as when entering a barracks or a prison, or subject to rituals and purifications. Only those who have been granted access and who have made a particular amount of motions are permitted to enter. Furthermore, there are heterotopias that are fully devoted to these practices of purification that are both religious and hygienic, like the Muslim hammam.

Sixth principle:

The final characteristic of heterotopias is that they serve a purpose in relation to the rest of the space. Between the two extreme poles, the latter unfolds. Their function is either to produce an illusionary place that reveals all real spaces, or to build (Compensation) another real space that is as flawless, thorough, and well-organized as ours or disorganized, poorly thought out and foggy (Diagram 3).

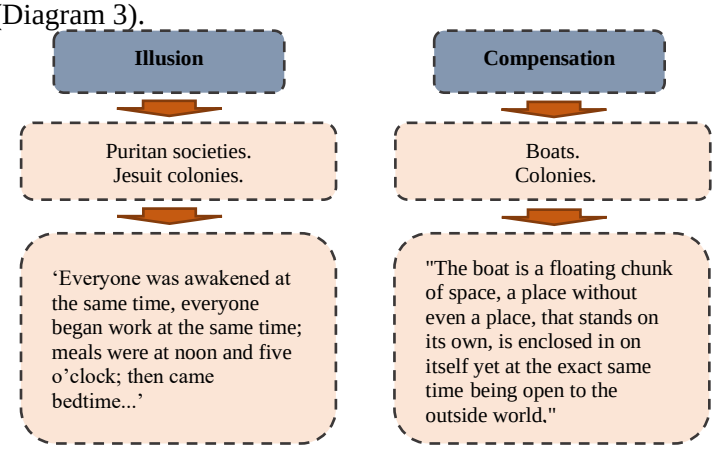
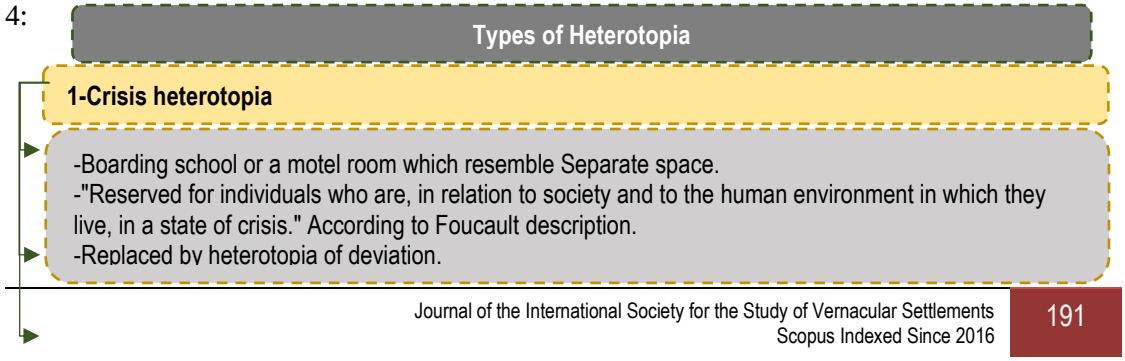


Diagram 3: illusion vs compensation
Source: Charlotte, 2010

Types of Heterotopia

Several potential heterotopias or spaces with multiple meanings are described by Foucault. The diagram 4 show the types of heterotopia extracted from the principle of the heterotopia. It started with crisis and deviation heterotopia which represent the first principle and ends with illusion and compensation which is the last principle (Johnson, 2006,88) Diagram 4:



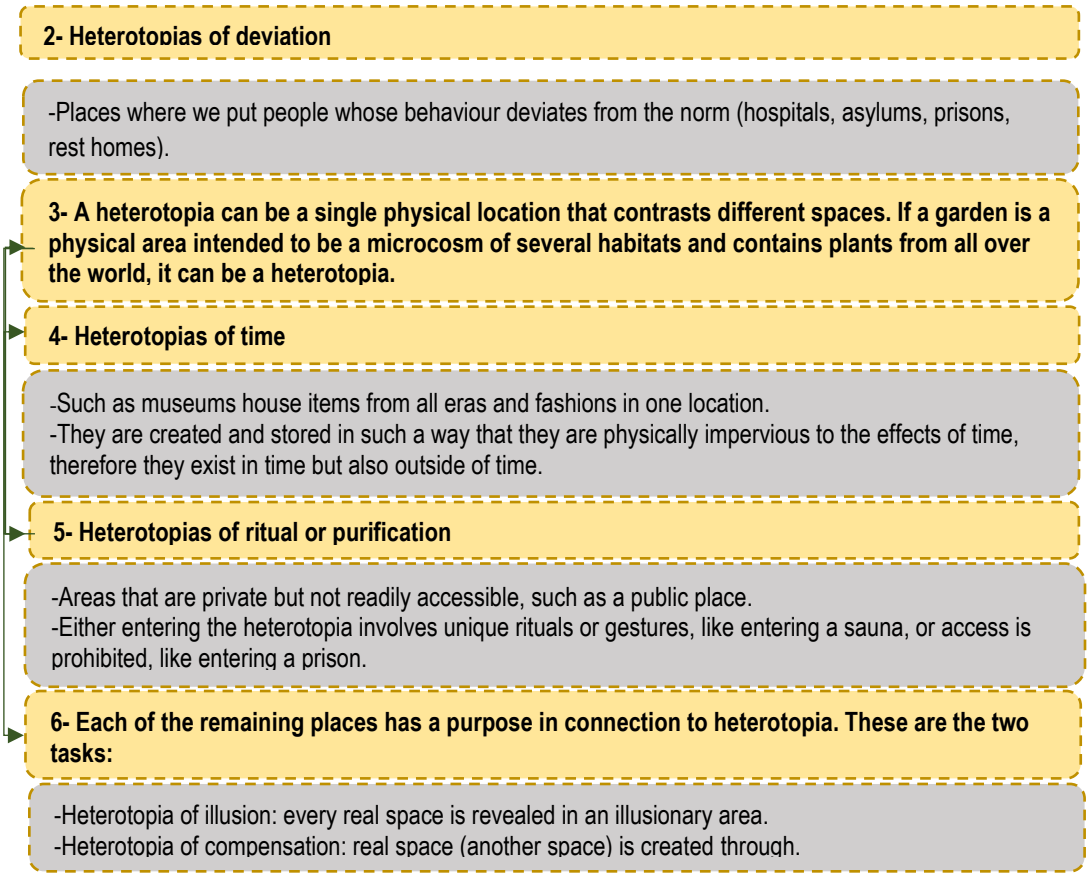


Diagram 4: Types of Heterotopia Source: (Foucault, 1986), (Author).

To sum it all up, heterotopia can be defined as a world that is off-center in reference to conventional or everyday contexts and has multiple, fractured, or even incompatible meanings, which is a rich concept in urban planning and literally means ‘other places’. This is a type of place that is simultaneously outside of all places and actually localizable. It forms public spaces in the present, and has a method of arranging space that was both antiquated and contemporary. They exist in all civilization: real places, effective places, and places that are written into the institution of society itself.

The Concept of Heterochronic

Heterochronies define both transient spatial formations and locations where time accumulates (Toprak, 2015:1). Heterotopias are linked to bits and pieces of time. When we find ourselves in a complete rupture of conventional time, according to Foucault, they emerge through a "pure symmetry of heterochronisms.” For instance, the graveyard as a profoundly heterotopian setting starts with that peculiar heterochronism, the loss of life, and a period of time that seems to never end between breakdown and erasure. The heterotopias of time that are museums and libraries serve as examples of our society's relatively intricate arrangements of heterotopia and heterochronism. In a way, the museum and the library symbolize our ambition to gather artefacts and information in one location, outside of the constraints of time, and to create universal archives (Sorkin, 1992). Multiple temporalities in one location are referred to as heterophonies, according to Foucault's fourth principle of heterotopias. Heterochronies can define urban environments in smaller or larger sizes, collecting numerous morphological and socio-cultural records of time in addition to architectural interpretations such as libraries and museums. In actuality, so-called "heterotopic urban spaces" create an endless accumulation of time and transcend time (Toprak, 2015:1). Thus, there are two types of heterochronic according to Foucault (1986) (Diagram 5).

The concept of heterochrony itself is susceptible to the dual realities of permanence and ephemerality. Heterochronies are thought to build a link between time and space. Such urban environments reflect continuity and iteration, portraying both the past and the present simultaneously. In metropolitan settings, commonplace events come to pass while making references to the past.

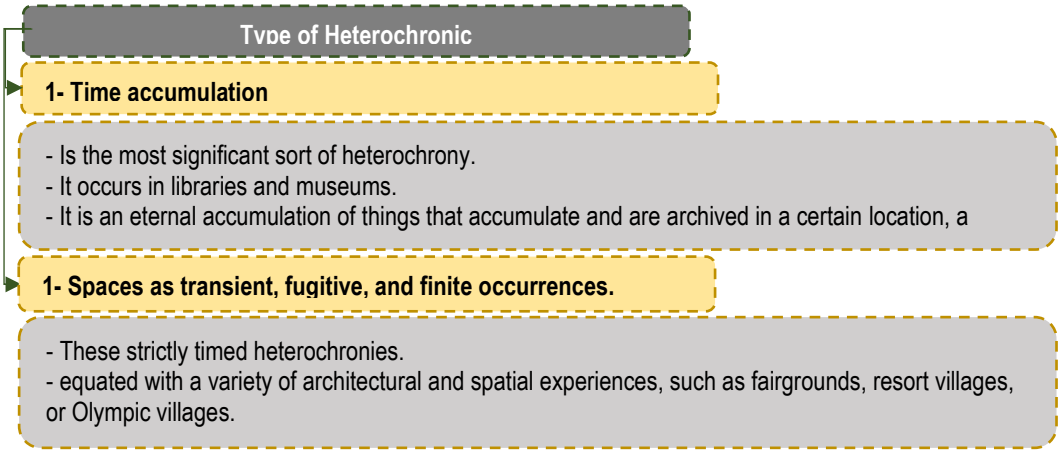


Diagram 5: Type of Heterochronic
Source: Foucault, 1986; Author.

Urban space as a heterochrony can thus support Foucault's claim that urban areas are sources of immediate knowledge. They provide concise, organized, and rapid information, similar to museums and libraries (Toprak, 2015:3). The two-sided perception of urban space as heterochrony creates a link between accumulation and disappearance of historical traces over time and ordinary "situations" involving cultural and social changes, but not in the way that a museum displays an accumulation of time setting, But rather as an experiential space where various time accumulation indicators can find their place (Toprak, 2015:3). Thus, Heterochronies are defined as artificial collections that have been brought together from many historical eras and placed in an unrelated setting.

The segmented nature of heterochrony space

Numerous philosophers have examined the spatiality of ‘situation’, including Sartre[3] and Merleau-Ponty[4], who focused on exploring the anthropological depth and conception of embodiment of ‘situation’ (Ha,2016), giving weight to individual and sociological insights into what constitutes the self. Heidegger distinguished the concept of ‘situation’ from the general situation, which depicted that ‘they’ (dasMan9?) iis an unreal spatiality. As a result, "situation “has a greater socio-cultural potential (Heidegger, 1996). Every circumstance has unique traits, associated cultural phenomena, defining events, and fragments of lived spaces. In architectural theory, the concept of "situation" and "urban artefact" could be explored interchangeably. In a city with a dynamic urban pattern, an urban artefact might be a square, a structure, or a roadway that commemorates a particular historical event (Rossi, 1982).Urban artifacts coexist and so create a city, bringing back the Collage City argument (Koetter, 1978), which proposes a theory of urban fragmentation.

Currently, it is also pertinent to discuss temporal and spatial discontinuities, particularly ‘historical discontinuities’ (Hays, 2000, p.296) that can reflect the segmented nature of heterochronies, particularly when sociological or cultural corruptions affect some ‘situations’ and allow them to become new ‘situations." The most important factor in creating the concept of heterochrony in urban space is time collecting. Although Foucault's method appears to involve a significant amount of artificial time accumulation, the majority of heterochronies in urban contexts exhibit a steady and natural time accumulation. As was mentioned earlier, heterochronies are defined as artificial collections that have been assembled from various historical periods and placed in contexts to which they do not belong.

For instance, urban space bring together numerous pieces of time with their structures and street layouts, which are representative of various timescales (Van Dijk, 1999). Over time, they enable the accumulation of time in itself. Rossin (1982) asserts that urban artifacts occasionally continue in their current state but occasionally degrade, after which their physical forms and traces endure. This persistence, which is known as a 'locus', solidifies with social memory. To understand an urban item, locus "emphasizes the conditions and attributes inside undifferentiated space". As a result, locus sees a variety of 'situations' and is the most intriguing route to explore an urban item. In addition, rituals and the communal nature of religious activity are significant in the creation of historically immutable elements (monuments), as they determine the beginning of a particular religious and socio-cultural activity in an urban pattern and offer a key to understanding urban contexts, according to Rossi(1982) and Toprak (2015).

In conclusion, Heterochronies define both transient spatial formations and locations where time accumulates. It is linked to bits and pieces of time. It represents a complete rupture of conventional time which refer to multiple temporalities in one location. Heterochronies construct a link between time and space and reflect continuity and iteration, portraying both the past and the present simultaneously. The concept of heterochrony itself is susceptible to the dual realities of permanence and ephemerality as artificial collections that have been brought together from many historical eras and placed in an unrelated setting.

The City of Memory

In this context, one way to think of the city is as the locus of its inhabitants' collective memory. The "memory becomes the history of the city and is connected to things and locations, becoming its" soul of the city. In the collective's works, "the collective memory participates in the actual modification of place, a transformation that is always constrained by whatever material realities resist it" (Cauter, 2008). Therefore, architecture and, by extension, the city itself, are both products of and providers of context. The individual artifact contributes to how the city is seen by its inhabitants as a whole.

From Rossi's perspective, the importance of history as communal memory is that it helps in defining the uniqueness and architectural significance of the urban structure (Rossi, 1982:130). Thus, the city is implied by the architecture; nevertheless, this city may be an ideal city with perfect and harmonious relationships, where architecture grows and creates its own reference points (Foucault, 1986:12). The city of memory is a recall of places, just as Hadrian's conception of the city. It is a model city from which all others can be inferred, similar to the cities described in Calvino's Invisible cities.

Calvino combines historical fiction and magical realism in his seemingly irreverent tales by mixing actual and made-up material. The travelogue 'invisible cities' takes you to imaginary locations. In order to reflect on the concepts of memory and place, this work disregards rules of form and narrative conventions. It also touches on a variety of topics, from the evolution of civilizations to the boundaries of communication (Yuen, 2015:1). Indeed, it is a city constructed entirely of anomalies, contradictions, and inconsistencies (Calvino, 1983). The city of memory is a perfect place where all abnormal components are diminished and all exceptions are eliminated from the model. In the city of memory, our own past transforms into a fictitious or real future and someone else's present, both of which we are excluded from.

Cyberspace and Heterotopia

The World Wide Web has made access to the information space, often known as cyberspace, possible over the previous years. Even if it can be experienced only through the use of computers, it is quickly becoming into a substitute stage for regular human activities such as economic, cultural, and other affairs. As a result, it has the potential and should be designed using place-like ideas (Kalay, et al., 2001:1). Therefore, it is puzzling that Cyberspace designers have not made use of the theories, insights, and methods that have informed the creation of physical places. Instead, they have chosen the severely insufficient "document metaphor," which refers to the web pages rather than 'web-places'.

Making cyber-places in 3D environments that closely resemble physical space is not significantly better suited to them because they rarely take use of the peculiarities of Cyberspace and frequently lack the crucial qualities that distinguish a place from a mere ‘space’. The potential for arranging Cyberspace into physical settings is that it embodies and expresses cultural values, in addition to providing opportunities for social interaction. At the same time, these ‘places’ might not exactly mirror their real-world equivalents because cyberspace lacks materiality, is unrestricted by physical laws, and can only be ‘inhabited’ by proxy (Kalay, et al., 2001).

Michel Foucault's "heterotopia," as well as more recent concepts like zone and contact-zone from Brian McHale and Mary Louise Pratt, reflect new spatial perceptions. According to Edward Said in post-colonial studies, cultural hybridity and the spatial idea of ‘liminality’ are connected. The liminal space is considered to be a key aspect of the city in urban studies. In his short tale "Burning Chrome6" cyberpunk author William Gibson first used the word "cyberspace" (1982; Bădulescu, 2012). Cyberspace operates on a similar premise as Foucault's heterotopias. There are many words, ideas, beliefs, and theories that speak to the layered and hazy spatiality of the modern world.

It is considered hyper real by Jean Baudrillard. Henry Adams's 8 claim that multiplicity is what governs the 20th century and is reiterated by Foucault when he asserts that "we are in an epoch of simultaneity. “Adams made this claim some 67 years earlier. A new frame of reference created by Adams' "multiplicity" led to a new understanding of time and space as being simultaneous (Bădulescu, 2012:3). Since 1967, fresh ideas have surfaced. According to Foucault, heterotopias are places of otherness that are both physical and mental, neither here nor there. Examples of such places include a phone conversation, an online discussion, Facebook, or the instant you look in the mirror. Foucault foresees social networking sites like Facebook with his claim that "we are at a moment when our experience of the world is less than of a lengthy existence growing through time but that of a network that connects points and intersects with its own skin." (Cohen, 2007) but that of a network that connects points and intersects with its own skein." (Cohen, 2007, p.1).

Cyberspace as (separate) space

According to how they view whether ‘cyberspace’ differs from ‘real space’ in ways that might influence the creation of legal rules, legal theories of cyberspace as space have traditionally been categorized. ‘Cyberspace’ and ‘actual space’ vary fundamentally in the eyes of certain cyberspace exception lists but not for all of them. However, that categorization is overly simplistic and fails to take into account the normative and performativity aspects of cyberspace theory (Zieleniec, 2008). Kevin Hetherington Examining how the primary conceptions of cyberspace as space relate to the concepts of utopia, isotopic, and heterotopia reveals a unifying subtheme that permeates all viewpoints on the sameness/difference dilemma (Strohmayer, 1999).Unexceptionalist/isotropies methods and exceptionality approaches whether utopian or heterotopian all rely heavily on the concept of Cyberspace as a separate space is:

- A space defined in terms of physical space yet is independent of it.
- Underlying and supporting the assertion of difference or similarity, at the expense of how users of cyberspace actually experience it. It is the metaphorical construct of cyberspace as a different space.
- By being positioned in two spaces simultaneously, users of cyberspace are denied their embodied spatiality.
- Additionally, it ignores the intricate interactions between the counterparts of real-space and virtual power geographies.

Creating a cyber-place

Spatial models are becoming ever more common in the design of various Web environments as a result of the development of computer modelling. These designs are predicated on the idea that we can transfer these behavioral patterns to virtual environments by

building them to look and feel the same way that the physical world's spatial components do, as many aspects of our behavior appear to be structured around. Possess the same opportunities for action and communication as the real world (Kalay, et al., 2001, p.6).

Cyber environments

For the sake of environmental, socio-economic, and cultural diversity, developing places in cyberspace can, and in fact must be informed by the ideas that have been guiding physical place making for decades. However, we'll argue that this isn't about simulating physical shape in digital media.

Cyberspace can't be 'spatialized' by merely using physically-based spatial metaphors (Anders, 1999). On the one hand, areas and things that were 'acceptable' in the physical world in terms of function and perception become inappropriate in cyberspace. On the other hand, the digital world provides options for place-making that do not exist in actual space. Currently, it's worth talking about four different types of environmental 'shells' for creating place-like environments in cyberspace:

- Hyper-reality Cyberspaces.
- Abstracted reality Cyberspaces.
- Hybrid Cyberspaces.
- Virtual spaces.

A. Hyper-reality Cyberspaces:

Hyper Reality makes every effort to replicate the real world in every way. It takes a lot of effort to reach the high standard of quality needed to be believed. The viewer's inability to spot 'telltale faults' serves as the test, similar to comparing the distinctions between a photo-realistic painting and a photograph. Technologically speaking, this has been easily accomplished utilizing radiosity in still pictures, but currently there is no way to transfer this quality on a large scale to the web, as much as its focus on resolving limitations related to the idea of the 'Laws of Nature': (Gravity, wind, weather, sunshine, natural materials, touch, smell, dust, dirt, and the deterioration of materials and surfaces.) Hyper reality is defined by the completeness of the images. Hyper reality environments can be used to reproduce historical locations that no longer exist or have never existed (Kalay, et al., 2001:7), such as Takehiko Nagakura's Danteum or Palace of the Soviets (Fig. 6) or locations that have not yet been created (for example, the Virtual Museum of Art's Al Pais, whose creators ran out of money while trying to create a real structure).

Fig. 6: Takehiko Nagakura, "The Palace of Soviets (1931)," MIT, digital reconstruction of Le Corbusier competition entry, compared to Constructivist Project for a Monument to the Third International, by Vladimir Tatlin, 1919, Moscow
Source: Nagakura, 2000

Hyper Reality environments offer a number of benefits for place-making:

- Richness of experience.
- Familiarity.
- Comfort.
- The presence of familiar objects like walls, ceilings, stairs, lights, and even mimicked materials makes the setting simple for people to comprehend and react to.

- Because there is no gravity in cyberspace, there is no weight.
- Distances are incredibly elastic; one can hyper-jump from one location to another without stopping at any intermediate locations.
- Hyper Reality's apparent physical similarity is deceptive because it only preserves the spatial characteristics of architecture, not its location characteristics.

Although various types of reality exist, hyper-reality is created using references either to reality or imagination. It does so in a complex manner rather than the linear transition from realism to hyperreality, which pertains to the fuzzy situation on our world. Since reality and hyperreality are equivalent in this situation, one might think of the simulation as just a gradation of reality (Diagram 6). Our contemporary reality is a hyper-realistic one, where one reality is moving farther from reality while another one is drawing closer to it. The issue with simulation isn't which simulation is more accurate, but rather which simulation is more realistic given the progression of hyper-reality. As a result, simulations could create a polarizing of reality that is becoming either progressively genuine reality or becoming increasingly real hyper-reality. (Diagram 7).

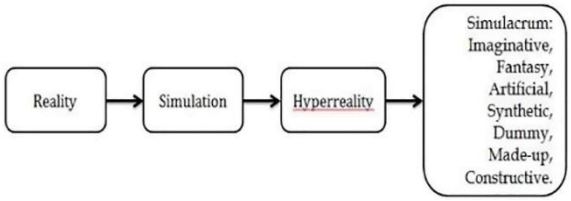


Diagram 6: Concept of hyper reality
Source: (Kurniasih, et al., 2020:4).

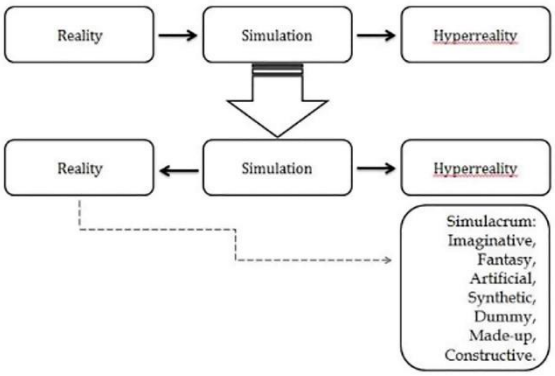


Diagram 7: New horizon of hyper-reality
Source: Kurniasih, et al., 2020 :4

B. Abstracted Reality:

According to Kalay, et al., 2001:11,

- Abstract reality does not aim to create a 'perfect' reality, it does adhere to enough natural rules to inspire plausibility.
- Textures and objects are abstracted; they are not precisely displayed.
- Attempt to stay away from unexpected or disorienting situations. For instance, one cannot pass through walls and must 'ride' an elevator or climb stairs to move from one floor to another.
- The imagery may have a 'cartoon-like' aesthetic.
- In contrast to Hyper Reality, Abstracted Reality offers far greater artistic license, allowing for the stretching or amplification of place-making characteristics like scale and temporality.
- Utilized to design places that are too expensive to build in the real world but possible to develop in a virtual one.
- The majority of cyber settings fall under this heading.

The University of Sydney's virtual campus visitors must 'enter' the 'conference building', 'take the elevator', and then 'sit' in the designated conference 'room'.

C. Hybrid cyberspace

According to Kalay, et al. (2001:8), hybrid cyberspace:

- Allows the free mixing of 'virtual' and 'real' experiences.
- It is not required to follow the natural laws. For instance, one could fly or pass through barriers. Due to the nature of odd juxtapositions, the spectrum of artistic expression is essentially endless and has the potential to easily become bizarre.

- Many components of the site might be impossible to construct in the real world. One may, for instance, take the shape of a blue caterpillar and ride on a car-sized mushroom.
- Participants may show up as realistic or fictitious avatars, as well as in symbolic forms like talking chess pieces or playing cards.
- It is possible for objects to act in strange ways, evolving in size, texture, and form over time.
- The difficulty for the designer is to find the ideal harmony between the real and the fantastical, so that the experience is aesthetically rich without becoming too sterile or disorienting to lose its feeling of place.
- Instead of being "natural," movement through this kind of environment could be relatively straightforward, allowing for quick shifts in location or time.
- Movement might also start to ignore "the ground plane" and become exceedingly three-dimensional.
- Disorientation is still a problem.

D. Hyper Virtuality

According to Kalay, et al. (2001:12), Hyper Virtuality:

- Completely disregards the laws of Nature and the real world.
- Generally, it steers clear of the known.
- The novelty and originality of the experience, to the deliberate exclusion of the known, is of utmost significance. Every location develops its own set of principles, which may contradict our perceptions of reality, materiality, time, and spatial containment.
- Walls, doors, windows, or other typical construction components like floors are meaningless in this context.

As emblem of this the Char Davies' Éphémère (Beckmann,1998).

- In terms of the prospects provided by the digital media, the most fertile.
- Utilizing the computer's capacity to organize time, data, and space in a way that is entirely unrestricted by the laws of (Marina, 2005) Nature has the potential to broaden the range of sensory experiences.
- Both any familiarity and the social cues that come with it are lost.
- Hyper Virtuality's limitless flexibility and complete rejection of place-making principles pose a threat to reduce this kind of Cyberspace to a form of place-less art.

Literature review

Halime and Metin aims to investigate and comprehend the affective cycles in the activities of the virtual world as a heterotopic realm. The goal of this auto ethnographic investigation into the compassion rhythm analysis of the metaverse. In other words, Halime and Metin concentrates on both 'rhythm' approach (2004) and the digital interactions, spatial, and impacts method put forward in the hope of thinking more deeply about the virtual world, which is the space of the long run or the heterotopic space distinguished as various from the existing one. The conclusions have some practical applications for those creating virtual reality or metaverse tactics, and they highlight important aspects of metaverse activities as well as the related emotions and their impacts (Halime, et al.2020).On the other hand Ungers discusses the advent of virtual worlds and the fuzzy line separating them from the real world (or 'phygital' connection).Ungers argues that It becomes transparent that the virtual world individuals lives are heterotopic in form by applying six qualifying elements of a heterotopia to this essentially uninhabited virtual world. Furthermore, it discusses the time and effort that is put into creating virtual personas to occupy these block chain technology and virtual world environments (Ungers, 1997). Calvino depicts edge cities and perimeter centers as essentially founded on social and economic class heterotopic situations. These 'virtual realms' are heterotopias that are impenetrable but also closed. In the virtual community of the perimeter center, time, space, and architecture have been purposefully designed to suspend belief in the 'other' reality that exists outside of its boundaries and to create a 'quasi-utopian' condition that simulates a 'new' reality while disproving historical allusions and defending current imperatives (Calvino,

1997).Heterotopia and the City combines theoretical contributions on the idea of heterotopia with a series of critical case studies that look at various post-urban developments, including a new translation of Foucault's seminal 1967 text, 'Of Other Spaces'. Through case studies on Jakarta, Dubai, and Kinshasa, the reader is given an insight into the extremes of our dialyzed, post-civil condition. A concerted attempt is made in Heterotopia and the City to reframe heterotopia as an important idea in modern urban theory and to reframe the discussion on the privatization of public space, learning about the city in the new post-civil civilization (Cauter,et al.2008).Further, Toprak and Alper goal is to assess how historical neighborhoods' and sociocultural backgrounds reflect changes in the morphology and semantics of their heterochronic elements over time. Toprak and Alper interprets urban spaces with historical backgrounds that can accommodate both the accumulation of time and the temporariness as Heterochronic urban spaces. The study's deconstructive methodology entails three stages of diachronic research: deconstructing, analyzing, and reconstructing history. Morphological or socio-cultural changes are identified by 'deconstructing history' through a multi-layered 'timeline' produced with significant historical turning points and a 'zoning' (Toprak, 2015).

Research Methodology

In this study, two projects will be analyzed, one of which will represent the heterotopic and heterochronic space and the other the cyberspace. In Table 7, the research will compare the two projects using the features listed in Table 6 that were obtained out of Tables (4 and 5). The research will then compare the two projects according to the results, where the green circle (🟢) represents that this condition has been met and the project will then have one point, and the red rectangle (🟥) represents that this indicator has not been met.

Case study

The research examines two projects, one of which is the Hadrian's Villa which symbolizes the heterotopic and heterochronic space while the other depicts the cyber space (Go Museum).

Hadrian's Villa

The Villa Adriana, also known as Hadrian's Villa (Fig.7), is located on a narrow plain that juts out from the Tiburine Hills. It is located 28 kilometers South-east of Rome in the town of Tivoli (Morselli, 1995). The villa, which consists of more than 30 structures, was built as Hadrian's getaway from Rome. A few areas of the complex bore the names of famous palaces and buildings that the emperor had visited while touring the rest of the empire (Marina, 2005). "Walking around it today, it is still possible to experience something of the variety of architectural forms and settings, and the skilful way in which Hadrian and his architect have contrived the meetings of the axes, the surprises that await the turning of a corner, and the vistas that open to view," wrote Sir Banister Fletcher in History of Architecture (reference?)

Fig. 7: Representation of the West-side of Hadrian's Villa
Source: (XU, 2020).

The historical city of Hadrian's Villa serves as a monument and memorial and marks the transition from metric space to the visionary space of cohesive systems, from the idea of homology (simplicity) to the idea of morphology (complexity). The ideal villa of Hadrian serves as a representation of the forms and transformations of ideas, facts, things, or conditions as they

appear over the course of time. In a morphological understanding of reality, physical phenomena are recognized as Gestalten in the course of their metamorphosis. The city may be viewed from two angles, according to Rossi (1982:128):

- First, as a physical item, a time-stamped creation created by a human being. Cities develop into historical narratives that provide significant data and documentation.
- Second, he sees the city from a morphological perspective, as a study of how urban artifacts are actually formed and built. This viewpoint addresses both the idea that the city is a synthesis of values and the actual structure of the city.

Hadrian's Villa exemplifies Foucault's theory of pure symmetry in heterochronisms in one way. The villa serves as a bridge between artifact and ruin, the present and the past, and consciousness and memory. It is connected to several points in time, much like the heterotopia of the museum. The villa actually served as a sort of archaeological museum during the reign of Hadrian, filled with antiquities (Fig. 8). The 'knowledge of antiquity' could be found in Hadrian's retreat's library, which was located in the center of the city. The villa is a little universe where humanist ideas are gathered in a 'classical' setting, evoking the idea of an ideal city, a humanist metropolis (Ungers, 1979:10). The villa is a heterotopia full with memories of the community rather than a purist or homogeneous system; it is a place that connects to previous events and serves as a blueprint for the future.

Fig.8: Plan of Hadrian's Villa
Source: (XU, 2020).

Go Museum (Peak Galleria)

The Peak Galleria is a recreational and retail center as well as a popular tourist destination situated at Victoria Gap, close to Victoria Peak's summit on Hong Kong Island (Go Museum, 2022). The Peak Plaza is home to the "GO Museum Light and Shadow Art Museum. It "is a brand new kind of exhibition that has light and shadow as its focus. In order to create a tense visual and acoustic experience, it makes use of seven light and shadow art works across the space (Go Museum: Timeout,2022) Light and shadow reflections can take you on a supersensory adventure that will make you feel as though you are in a science fiction setting (Fig. 9).

Fig.9: On the lift: google shot of the area of the go museum place [30], on the right the Go Museum and Peak Galleria Source: Timeout, 2022

The system will engage with the viewers and create different forms and modifications according to the visitors' activity. Attendees enter the system and must use the lens to keep in touch with the images they present. CyberX, a very intelligent artificial intelligence system is used in this exhibition project and has no internal language. It communicates by using the body

to display bizarre brilliance and distorted patterns. Each moment you use the system, they could change variously. Using your eyes and other sensors, the CyberX system slowly feels it.

Results

After analyzing the two projects and after what was presented above, the research reached two tables (4, 5), each of which represents a description of the heterotopic and heterochronic space, and the cyberspace. Where, table 4 represent indicator of cyberspace shown by each type (Hyper-reality Cyberspaces, Abstracted reality Cyberspaces, Hybrid Cyberspaces, Hyper Virtuality) and there characteristic. On the other hand Table 5 represents indicator of the heterotopic and heterochronic space and there characteristic.

Table 4: indicator of cyberspace
Source: Author

	Factors	Main indicators	secondary indicators	Third indicators
VIRTUAL REALITY	cyberspace	A. Hyper-reality.	1-Simulacrum. -Imaginative. -Fantasy. -Artificial. -Synthetic. -Dummy. -Made-up. -Constructive.	-Mixed, in-between experience. -Two-sided perception.
		B. Abstracted reality.	2-does not aim to create a "perfect" reality -Textures and objects are abstracted.	-Inspire plausibility. -Portraying both the past and the present simultaneously. -continuity and iteration
		C. Hybrid Cyberspaces.	3-mixing of "virtual" and "real" experiences. 4-quick shifts in location or time.	-Harmony between the real and the fantastical. -Transient.
		D. Hyper Virtuality	5-Completely disregards the laws of nature and the real world. 6-broaden the range of sensory experiences.	- Loss of familiarity and the social cues. -Outside of time. -finite occurrences.

Table 5: indicator of heterotopic and heterochronic
Source: Author

	Factor	Main indicators	secondary indicators	Third indicators
REALITY		-Heterotopias of crisis -Heterotopias deviation	1-In all civilization. -Localizable. -Can be found within culture. -Places that are written into the institution of society itself.	-Mixed, in-between experience.
		-Heterotopias of ritual or purification	2-opening and closing mechanism. -isolated.	-Inspire plausibility.

REALITY	Heterotopic space	-Heterotopias of Counter-emplacements.	3-Power of juxtaposition. -A kind of places that are outside all places. -Effective places. -Contested and inverted.	-Harmony between the real and the fantastical.
		-Heterotopias of time	4-connected to time-slices. -Simultaneously represented. -permeable.	-continuity and iteration
		-Heterotopia of illusion	5-functions are variable. -creating a space of illusion. -shared or collaborative. -Effectively realized utopias in which the real emplacements. -forming another real space.	-finite occurrences.
		-Heterotopia of compensation.	6- Serve a purpose in relation to the rest of space. -Real places. -These places are absolutely other than all the emplacements that they reflect.	-Loss of familiarity and the social cues.
	Heterochronic space	Heterochronic of time accumulation.	1-Time gaps, breaks, accumulations, and transitions. -linked to bits and pieces of time. -extreme breach with customary time. -time accumulates indefinitely.	-Two-sided perception. -Portraying both the past and the present simultaneously.
		Heterochronic of transient spatial formations.	2-Temporal formations in various circumstances between the eternal and the transient. -creating a place of all times. - Situations. -link time and space.	-Transient. -Outside of time.

Table 6 illustrates the degree of the alignment of factors between the reality described by the heterotopic and heterochronic space, and the virtual reality reflected by the cyberspace, based on the findings of tables (4, 5).

Table 6: Cyberspaces as Heterotopic and Heterochronic
Source: Author

Virtual reality \ Reality	Heterotopic	Heterochronic
Hyper-reality Cyberspaces.	-Mixed, in-between experience.	-Two-sided perception.
Abstracted reality Cyberspaces.	-Inspire plausibility. -continuity and iteration	-Portraying both the past and the present simultaneously.
Hybrid Cyberspaces.	-Harmony between the real and the fantastical.	-Transient.
Hyper Virtuality	-Loss of familiarity and the social cues. -finite occurrences.	-Outside of time.

The Table 7 illustrates how closely the results of each project Hadrian's Villa and project Go Museum are connected, demonstrating how cyberspace serves as a representation of post-reality and virtual reality in heterotopic and heterochronic spaces. These characteristic in table 6 were used in the measurement and comparison between the two projects (Go Museum and Hadrian Villa), where the Hadrian Villa project received 8 points out of 10, while the Go Museum project was received 9 points out of 10.

Table 7: Comparison between Go Museum Hadrian Villa

Source: Author

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REALITY-VIRTUAL REALITY / Project	Go Museum	Hadrian's Villa
Mixed, in-between experience.	●	■
Two-sided perception.	●	■
Inspire plausibility.	■	●
Continuity and iteration.	●	●
Portraying both the past and the present simultaneously.	●	●
Harmony between the real and the fantastical.	●	●
Transient.	●	●
Loss of familiarity and the social cues.	●	●
Finite occurrences.	●	●
Outside of time.	●	●
Total point	9/10	8/10

Discussion

Table 6 shows the indicators that combine both the virtual and real worlds represented by the heterotopic, heterochronic space and cyberspaces, which are: Mixed, in-between experience, Two-sided perception, Inspire plausibility, Portraying both the past and the present simultaneously, Harmony between the real and the fantastical Transient, Loss of familiarity and the social cues, and Outside of time. The Table 7 shows a comparison between the two projects, where the green dots (●) indicate that the project has achieved this indicator, while the red rectangle (■) indicates that this project has not achieved this indicator. The Go museum has achieved 9 out of 10 indicators, while Hadrian's villa has achieved 8 out of 10, which means that Go museum Which is completely based on cyberspace is stronger similar to the project Hadrian's villa which resample heterotopic and heterochronic space.

Conclusions

The study concluded that the characteristics of cyberspace reflect and symbolize the future of heterogeneous and heterogeneous spaces. It is possible to define a heterogeneous and heterogeneous space framework for observing cyberspace. Here, it can be said that the research has achieved its objectives, which represents the possibility of analyzing and evaluating cyberspace as representing the heterotopic and heterochronic space. Both spaces represent Mixed, and in-between experience spaces and both of their concepts revolve around representing reality and virtual reality (Two-sided perception). Since each of them represents two civilizations or two worlds together, both of them inspire plausibility, although they represent illusion. However, this is all within the fathomable limit, both continuity and iteration, and both portraying the past and the present simultaneously.

Both of their spaces are able to absorb the past and the present together simultaneously: harmony between the real and the fantastical, although they inspire imagination. However, both of them work harmoniously to achieve a balance between truth and imagination. They are transient and there are no borders for them. Both of them have dynamic and fluid borders: loss of familiarity and the social cues.

The users of the two spaces will feel a change in the general social situation and a departure from the usual. Both of them have finite occurrences, and finally each of the spaces is similar in that they are outside of time. They do not have a specific time limit or a certain era. You can see and live the past, present and future together.

Notes

1. paradise garden: is a type of park that dates back to the Old Iranian era, notably the Achaemenid, and is formalized, symmetrical, and frequently enclosed. The most common design is chahar bagh ("four gardens"), a rectangular garden divided into four sections with a pond in the middle. Ponds, canals, rills, and fountains are all common characteristics in paradise gardens, making water one of its most essential components. Another name for it is an Islamicgarden. During the Muslim Arab conquests, the garden style spread throughout Egypt and the Mediterranean, reaching as far as India and Spain.
2. emplacement In French, the word "emplacement" can refer to a support, such as a billboard, as well as a site or position (such as a parking spot or the setting of a city). Enemplacement, which refers to space or rather location in the era of the network as opposed to extension, should be regarded as a technical phrase in Foucault's text.
3. Jean-Paul Charles Aymard Sartre: was a prominent figure in 20th-century French philosophy and Marxism, as well as a dramatist, novelist, screenwriter, political activist, biographer, and literary critic. He was also a French. One of the important figures in the existentialist (and phenomenology) schools of thought was Sartre.
4. Maurice Jean Jacques Merleau-Ponty: is a French phenomenological philosopher who was heavily influenced by Martin Heidegger and Edmund Husserl.
5. Liminality: is a stage in which one moves from one to the next, particularly between significant life stages or during a rite of passage.
6. Burning Chrome: is a short piece of science fiction written by the American-Canadian author William Gibson.
7. Jean Baudrillard: a sociologist, philosopher, and cultural theorist from France. In addition to developing ideas like simulation and hyperreality, he is most recognized for his critiques of media, modern society, and technology communication.
8. Henry Brooks Adams: was an influential family member who was also an American historian and a direct descendant of two U.S. presidents.

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