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ArchiDOCT 18, 10 (2) TEMPORALITIES

Editorial

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The 18th issue of ArchiDOCT presents papers that explore the theme of 'temporality' in architecture and the built environment from a theoretical or an applied standpoint. A variety of approaches, insights, and opportunities for research that arise from considering time in its heterogeneous dimensions and manifestations such as time as speed, rhythm, sequence or horizon have been handled.

In recent decades, the conceptualization and analysis of time has moved beyond Newtonian, linear, and objectivist approaches. The move toward "subjective temporal assumptions", such as orientation towards past, present, and future, synchronicity, temporal depth, polychronicity, simultaneity, can have an impact on shaping strategic action within the field of architecture and design. Furthermore, new media and tools have opened new questions regarding the cognitive, perceptual, and ontological dimensions of time while disclosing a new set of different 'temporalities' that coexist and interfere with each other.

Authors whose doctoral research approached time in its entanglements with fiction, memory, embodiment, and potentiality were invited to submit their works. The call for papers included suggestive points of view such as fiction and story-telling being used as a tool for motivating organizational change and for reimagining the future by extrapolating possible futures from a radically diverse reading of the past; and memory, seen not only as narrative but also as material, as capable of recasting the study and modification of material artifacts as catalysts for the reinterpretation of past-present concerns to inspire future meaningful actions. Refocusing the discussion about architecture on issues of temporality, might inevitably bring into question the concepts of permanence and experience, movement and duration and ultimately change. A focus on a temporal understanding of architecture and all design-related issues is after all a focus on difference: change becomes a key factor where 'things' are maybe better understood in terms of 'becoming' rather than 'being'.

Within these premises, the 18th issue of ArchiDOCT invited academics, early career researchers, and PhD students, to submit papers that deepened our understanding of the possible relations between architecture, design and temporality. The objective was to define a new epistemological horizon for architecture while at the same time exploring the range of temporality's theorization and the scope of its possible implementation.

The guest editors of this issue welcomed investigations on the theme of 'temporalities' - and time - in design processes and discussions through both a theoretical and practice-based approach to highlight the breadth and scope of the speculations of their possible implementation can bring about. For this reason, and considering the range of possibilities contained in the topic itself, it was specified that the contributions could approach the theme with a variety of methods and time-based procedures. That meant

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In 1999 he got a position as Assistant Professor in the Department of Continuum Mechanics and Theory of Structures of the Universitat Politècnica de València (Polytechnic University of Valencia) and four years later became Tenured Professor in the aforementioned department, being nowadays on active service. In 2010 he was Visiting Professor at the Illinois Institute of Technology at Chicago. Moreover he has taught as guest lecturer in institutions such as the Universitetet i Stavanger (Norway), the Politecnico di Milano (Italy), the Yildiz Teknik Üniversitesi (Turkey), the Technische Universiteit Eindhoven (Netherlands) or the Universidad Autónoma de Encarnación (Paraguay).

His expertise is in advanced structures analysis and design focused mainly in structures for housing, historical structures and big sport facilities. He has participated in many congresses and published several papers in research journals about these and other topics always related to building structures. In 2016 he was elected Project Leader of the Erasmus+ Project "Confronting Wicked Problems: Adapting Architectural Education to the New Situation in Europe" funded by the European Union which had been the main research project since 2014 of the European Association for Architectural Education Council (EAAE).

In 2012 he became Academic Advisor of the Higher Technical School Architecture and four years later he became Director of this school, being nowadays on active service after being reelected in 2020. From 2013 to 2016 he was member of the European Association for Architectural Education Council (EAAE).

In 2013 he was awarded the Docent Excellence Prize by the UPV Social Council and the Education, Culture and Sport Department of the Valencian Regional Government. He coordinates his teaching responsibilities with his professional practice in his studio at his home town. Some of his projects have been published by specialized journals.

also discussions concerning conceptual and methodological papers touching upon tangible examples of temporalities either in applied design strategies or for research purposes. The main aim was to investigate the importance of temporal-related phenomena through ideas and lateral perspectives that could enlighten different conceptions related to temporal structures, norms, and assumptions and their inner dichotomies: linearity vs. simultaneity; diachronicity vs. asynchronicity; cognitive vs. experiential; and so on.

The interest of the proposed topic and the multiple points of view suggested, along with the rising prestige of archiDOCT as a research journal, led to the arrival of more than forty proposals, all of them with a remarkable quality. The members of the Scientific Committee have faced the arduous task of reviewing all that many abstracts and full papers, carefully scoring them in each phase in order to select the best ones. The success of the call and quality of essays received papers have been such that the Editorial Committee has decided to dedicate the next issue of the journal to this topic as well, making it possible to double the number of proposals that will be finally published.

"**Timeliness and timelessness in spatial comprehension: Schematicity of socio-cultural knowledge in space and place constructions**" is a good-practice example by **Philip D. Plowright**. This English researcher holds a Master in Architecture from the University of British Columbia in Vancouver, Canada, and a PhD degree from the Universidad de Castilla-La Mancha in Spain. He is currently professor of Design, History and Theory at Lawrence Technical University in the United States. Philip D. Plowright is a founder of the systems-based think tank, synchRG, a registered architect, and editor-in-chief of Enquiry: the Architectural Research Centers Consortium (ARCC) journal of architectural research. He has published and lectured widely around issues of meaning, interpretation and process in architectural design. The essay that he has composed for this issue of archiDOCT describes how, traditionally, space and place have been positioned as diametrically opposed concepts, being impossible to focus on one if the other is considered. Being place the site of human experiences and significant associations, on the contrary space has no borders and is empty of human value. The manuscript examines this normative conceptualization of space by means of considering its relationship with time and human presence. According to Plowright's reasoning, space, as a situated experience, can be considered as a container of a large volume of human meaning activated through a series of structures, schemas and metaphors. In the end, space and place will not be considered as dichotomous but parallel and supportive experiences, since they both include socially constructed meaning.

The first manuscript is written by **Ingrid Mayhofer-Hufnagl**, PhD architect and assistant professor of architecture at the Leopold-Franzens Universität Innsbruck in Austria. The work, titled "**Anastrophic architecture: How to operationalize architecture to design time**", attempts to discuss how new algorithmic methods specific to the field of artificial intelligence might offer new concepts of temporality to architecture. According to her reasoning, this circumstance could modify our logic of time with the corresponding consequences not only in our design methodologies, but also in how we understand history. For the author, the transformation of time is far more meaningful than other traditionally relevant entities in architecture such as objects or forms. Different cases are discussed to illustrate this phenomenon, revealing that traditional linear approaches might be illusory effects imposed by human narratives and biological analogies. The discovery enables an investigation of the possibility of operationalizing architecture to structure time differently, reversing traditional logics.

The second manuscript is entitled "**Critique of permanence and linearities in urban Africa. Perspectives from Onitsha markets in Nigeria**" and is written by **Chukwuemeka V. Chukwuemeka**, a multi-disciplinary designer and urban researcher who holds a PhD in Architecture from KU Leuven in Belgium, and is currently postdoctoral fellow at Princeton University in the United States. His work deals with the temporary nature of urban markets, specifically those which nowadays are at the heart of the day-to-day life and growth of Onisha, Nigeria's third largest city. The flow of people and merchandise in these locations leads to fractal types of spatiality in space and time, closely linked to the Igbo culture of the region. These genuinely local spatialities are often in clear contradiction with the logics of linearity and permanence typical of Western cultures and that still permeate urban planning in many post-colonial African cities. The manuscript explores this contradiction and how to learn from this emergent forms of spatiality when ambitioning equity.

Marcel·lí Rosaleny-Gamón is the author of the third manuscript. He is a young architect and PhD candidate at the Polytechnic University of Valencia in Spain. His work, titled "**That what persists and that what perishes: The Valencian *Barraca* in the cultural landscape and the collective imaginary**", focuses on how time has shaped the two kinds of agricultural landscapes typical of the county where the city of Valencia lays. Their defining elements nowadays are the result of a process of persistence and perishing of different features throughout the history of the county. The current cultural landscape is defined by those which exhibited more resilience, such as the traditional house, so called *barraca*, whose apparent temporary and fragile aspect conceals a meaningful set of virtues and values. Its appearance and image have gone beyond the merely original utilitarian aspects and have been decisively incorporated into the local cultural imaginary in multiple disciplines such as painting, photography or literature.

The fourth manuscript contains the results of the doctoral research of **Stefano Romano** and his PhD tutor, **Valerio Perna**. Both architects are professors at the Faculty of Architecture and Design at the Universiteti Polis in Tirana, Albania. "**Revolving around 'temporality'. Contingency as a means to question the stability of space through the flowing of time**" deals with the traditional subsidiary consideration of time when it comes to architecture and compared with pure spatial aspects and the idea of space. The authors argue that this usual understanding of archi-

tecture as a singular stable object is threatened by a more complex analysis which considers everyday dynamics. The essay aims to explore the possibilities disclosed by incorporating and interpolating the notion of temporality in architecture through a comparative analysis encompassing architecture and art and leading to an understanding of the reciprocal relationship existing between body and space and some materializations of it. The concept of contingency, understood as a future event or circumstance which is feasible but cannot be predicted with certainty will play a relevant role.

Juan Francisco García Nofuentes and **Roser Martínez Ramos e Iruela** are the authors of the fifth and last manuscript of this issue of the journal. Both are architects and got their PhD degrees at the University of Granada, where they are currently tenured professors at the Higher Technical School of Architecture. Their essay, titled "**Territory, horizon and tobacco. Eternal ethnographic architecture in a certain period of time**" deals with the concepts of geometrical chronotope and typological chronotope. This term refers how configurations of time and space are represented in language and discourse. The chosen example that will guide all their reasoning is that of the tobacco drying sheds that dot the county of the *Vega de Granada*, characterizing its landscape. Studying the syntactic and morphological conditions of these purely rational prototypes, the semantic connotations of the area studied are revealed and many time invariants will become the essence of this timeless architecture.

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Articles

Timeliness and Timelessness in Spatial Comprehension: Schematicity of Socio-Cultural Knowledge in Space and Place Constructions

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Keywords: space, place, situatedness, correlational metaphor, image schema

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Traditionally, space and place are positioned as diametrically opposed concepts in which the presence of one excludes the possibility of the other. The axiological content assigned to these concepts follows from this opposition. As place is the site of enriched human experience and significant associations, it follows that space is endless, universal, and empty of human value. This article examines our normative conceptualization of space through considering its relationship with time and human presence. Space, as a situated experience, can be considered to contain a large volume of human meaning activated through embodied structures such as image schemas and conceptual metaphors. The suggestion is that our experience of the built environment should not be considered through diametrically opposed concepts but, rather, increasing, and co-existing, levels of specificity.

This article considers space to be a socially rich environment rather than a volume devoid of human meaning when it is examined through considerations of time, situatedness, and embodiment.

1. Time is space

We *move through* time, we *seize* a moment of time, we *retrieve* a memory, time *passes*, it *accelerates* or *slows* down. What do we mean when we use these words to describe time? If we consider them precisely, we will understand none of these terms are referencing concepts that are part of a domain of knowledge that is defined by time. Rather, all the events in these expressions are ones linked to movement (move, accelerates, passes, slows) or human actions that connect our bodies to objects (seize, retrieve). While these are just a few ways that we conceptualize time, the most common way we understand time is through space and spatial motion. The space-time relationship is considered to be asymmetric in that we conceptualize time in terms of space but do not often conceptualize space in terms of time (Casasanto & Boroditsky, 2008). Yet, while explicit references might be difficult to identify, any discussion of motion or activity linked to space inherently involves the concept of time (Casasanto, 2009).

Time, as an abstraction, is difficult for humans to engage directly. For us to talk and think about something that is not tangible, the standard cognitive operation is to transfer concepts from concrete experiences to engage abstract notions (Croft & Cruse, 2004; Kövecses, 2010; Lakoff & Johnson, 1980, 1999). The most accessible concrete experience is that of our bodies within our environment, and we use this knowledge understand more abstract things like time, ideas, emotions, feelings, and other people. We find examples of these cognitive structures in the way we construct concepts through language, so we have expressions such as *holding* an idea, *giving* advice, or *bottling* rage, where none of these actions are literal. This source experiences use some basic concepts such as physical dimensionality (length, width, height) and spatial positioning (above, below, in front, behind) but also relative relationships such as objectification, adjacency, containment and gravity (Clausner & Croft, 1999; Gibbs & Colston, 2006; Grady, 2005; Kuhn, 2007; Lakoff, 1987; Oakley, 2007; Rohrer, 2005;

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Zlatev, 2005). These basic concepts are used to construct embodied knowledge through situated sensori-motor experiences that includes causation and agency (Mandler, 1992, 2005).

Ultimately, the relationship between time and space can be defined as a *correlation-based conceptual metaphor* (Grady, 2007) using space, containment, and spatial motion image schemas (Grady, 2005; Johnson, 1987, 2005, 2007; Lakoff, 1987). Conceptual metaphors should not be confused with linguistic metaphors which we understand simply as an embellishment in literature and speech (Lakoff & Johnson, 1980). Rather, conceptual metaphor has been shown to be a persuasive cognitive operation at the core of human thinking (Gentner et al., 2001; Gibbs, 2008). It is a systematic mapping between two ideas that are found in two different domains of experience, where a domain is a sphere of associated knowledge (Brandt, 2004; Croft, 2006; Gärdenfors & Löhndorf, 2013). In this case, we use concepts that are found in the experiential knowledge domains of space, spatial motion, and human actions to describe and understand concepts of time in a concrete-to-abstract mapping. The resultant relationships are conceptual metaphors because of the presence of incongruence – time is not literally a physical object; it does not really have speed, nor does it move through space. In addition, these mappings are a particular type of conceptual metaphor called a *correlational* metaphor. Correlational metaphors are not created through any resemblance relationship, and they lack any shared features or association which can explain the metaphorical association. Rather these metaphors have evolved through the human cognitive system based on "elements of universal human experience – basic sensori-motor, emotional and cognitive experiences which do not depend on the particulars of culture." (Grady, 2007, p. 321) The act of a human body occupying and moving through space is such a fundamental universal human experience. It is so fundamental, in fact, that we tend to take it for granted or ignore its significance. What we do, however, is establish a recurring pattern between the concrete knowledge of spatial experience which we use to understand the abstract, non-tangible experience of time. To state this in a slightly different way, "we conceptualize the less clearly delineated in terms of the more clearly delineated" (Lakoff & Johnson, 1980, p. 59).

The "clearly delineated" is embodied knowledge that evolves through our physical development in our experience between our sensory experience, our understanding of our bodies, and the environment in which we exist. This includes time-space correlational metaphors which are grounded in sensori-motor experiences structured by image schematic structures (Martín et al., 2020). An image schema is neurobiologically grounded as "recurrent patterns of bodily experience" (Rohrer, 2005). These structures are the foundation of embodiment and most of them "are often spatial, typically topological (e.g., CONTAINMENT, LINK, PATH, CENTER-PERIPHERY) or physical (e.g., SUPPORT, ATTRACTION, BLOCKAGE, COUNTERFORCE). " (Kuhn, 2007). In this way, space forms a primary site of existence – something so fundamental that its significance in the construction in our understanding of more complex socio-cultural meanings is often left unexamined.

This means that our environment and physical experiences, both natural and built, is a source of knowledge used to make sense of our existence through mappings to abstract concepts that contribute to complex socio-cultural meanings. However, an importance aspect is that the relationship is not one-directional. While we use our physical environment and experiences to understand abstractions, we also use our abstract knowledge to enrich our understanding of our physical environment. We project our social relationships, human identities, values, and belonging into our objects and spaces to make sense of them. This starts with aesthetic and experiential qualities such as spatial positioning, directionality, materiality, and scale but extends cultural meanings, beliefs, and ideologies (Caballero, 2013, 2014; Kövecses, 2010; Plowright, 2020; Plowright & Adhya, 2023). We then give our built environment the agency to affect us through the way we see ourselves, what we think we can do, who we think we are, and what we believe. As a circular relationship, the environment in which we have evolved is seminal in shaping the way we think, and then the way we think then influences how we construct our spaces (Plowright, 2018, 2020; Plowright & Adhya, 2023). As part of fundamental cognitive development and processing, conceptual metaphor and schemas are formative to this transfer between environment and human cognition. However, time plays a significant role in helping us understand more advanced overlays into generic concepts of space that evolves into situated space and enriched space (or place).

2. Space is time

One question we might consider is while time is understood through concepts of space, is space understood through concepts of time? Space is in a fundamentally different cognitive category than time as it lacks true abstractness and is directly involved in embodiment (Johnson, 1987, 2007). This means that space can be defined through its observable properties rather than through a correlation to some else. However, we also have a tradition of treating space as a neutral and abstract. Space is simply that a boundless and continuous three-dimensional expanse that makes up our reality. Inside this expanse, we find all the objects and substances with which people can interact. Since space does not have any content or apparent use that humans can perceive, we consider it to be empty. We think about space as something we can fill or an extent that is available to us to occupy and use. In this way, space is defined as an endless, unbounded, generic, and limitless universal resource. Is it?

Space is traditionally defined "by its formal invariants" to be "a priori universal" (Pellegrino & Jeanneret, 2009, p. 279) making it measurable but universal, continuous, generic, and absent of any topographical characteristics. This attitude restricts descriptions of space to only quantitative information and "general concepts of extension and dimension that constitute form" (Smith, 2003, p. 11). As the dominant definition of space, we understand space as conceptualized but not experienced, lacking the capacity of

human meaning. Place, in contrast, is defined as a locale with rich human meaning (Agnew, 2011; Norberg-Schulz, 1996; Tuan, 1977). However, space can hold the status of empty, meaningless, and universal *only if it is considered as independent to time and human cognition*. The interaction of space with time requires the consideration of events, motion, processes (decay, growth) and, important for us, the physical presence and conceptual awareness of a person.

The need to consider something between space as a continuous, formless topography and place as a site of personal and cultural associations has been expressed in the work of Smith (2003). Smith shifts the conversation slightly from definitions of space and place to include a third idea: landscape. For Smith, landscape is the bond between space, defined as forms tied to physical experience, and place, defined as geographic or built forms to which humans attach meaning. Landscape can be understood as "land transformed by human activity or perception" (Smith, 2003, p. 10) which involves both the physical transformation of the ground as an objective action but also interactions that include moving across, settling in, gazing upon, and otherwise engaging that physical territory. Landscape, then, allows us to overlap the measurable concept of space as "the general concepts of extension and dimension that constitute form" with the descriptive concept of place which "refers to how specific locales become incorporated into larger worlds of human action and meaning" (Smith, 2003, p. 11). It reinforces that the human-built environment occurs through a synthesis between *extent*, as defined through the dimensions of height, width and length, and *duration* as defined through the dimension of time. What Smith is describing is a situated space as a significantly different concept to generic space. Situated space is experience through the relationship between presence of a body, which has specific sensory orientations and limitations, and the compositional arrangement of surfaces, objects, and volumes. This type of space is not generic but a *specific* (locale). Our theoretical traditions produce a type of blindness by focusing on the space-place axiology as the extremes between timelessness and reminiscence (Agnew, 2011; McKenzie & Tuck, 2014; Norberg-Schulz, 1996; Tuan, 1977). While situated space might lack access to personal meaning created by memory and reflected experience, it does contain a very rich area of socio-spatial knowledge.

A situated space contains a significant amount of human meaning based on embodied experiences that are shared human capacities. These start with simple morphological and sensory experiences such as directionality (front, top, left and right) and the capacity of our vision and hearing. We look to identify 'fronts' in other people and objects around us because we instinctually understand that it is the site of engagement based on our experience with our bodies. We *know* that things in our line of sight are understandable through visual interpretation. The opposite is also *known* – if we cannot see something, we cannot *know* what it is. We *know* that touching something means that we can manipulate it, control it, or have access to whatever it is. In this way, physical and visual access are important as we relate physical distance to abstract concepts such as relationships, emotional connection, intimacy, control, and power (Plowright, 2020). We understand the relationships of people through their spatial positioning and perceived access things around them. We also make sense of things that are not people in the same way, such as building elements, furniture, or even entire buildings in an urban context.

The major social indicators found in space are based on image schema and correlational metaphors associated with sequential temporal interaction. These are directionality, orientation, proximity, vertical positioning, visibility, and exposure (Plowright & Florence, 2021). In practical terms, we can understand them by simply considering which way we are facing, which direction we can move, what is close to us, what is above or below us, what we can see, and what can see us. This content is held in the spatial composition of a bounded and situated location through the arrangement of physical elements which indicate or influence how that space might be used by people in that location. It is not possible for space, in this sense, to be inert, abstract, or lacking in human meaning. The compositional arrangement of that space will suggest expected social relationships between the individuals regardless to personal or idiosyncratic memories. This allows us to avoid creating a false dichotomy through the Hegelian separation of space from time (Smith, 2003, p. 11) which positions only place as meaningful to human experience.

3. Place is space

While we have two types of space, the generic space as an abstract concept and the situated space of human experience, we also have to consider the notion of place. Place has traditionally been considered as a juxtaposition of three major constituent elements: "conceptions, activities, and physical attributes." (Canter, 1977) Physical attributes are provided by situated space through the extension and composition of forms in context. In addition to this information, activities and the values people hold and prioritize are involved in our recognition of place. To say it another way, place is the integration of space into constructed narratives of human meaning and human action (Smith, 2003). We can understand the three concepts – conceptual space, situated space, and place – operating at three different levels of schematicity in the same locale. These include differences in the type and complexity of schema and correlational metaphors as well as the application of time. Situated pace is experiential focused on how forms delimit physical interactions (i.e., the production of boundaries) while place would extend into memory, emotion, and time-based experiences. Both space and place would produce meaning but that meaning would be significantly different in its epistemological boundary. When we engage a specific locale, it includes both space information, as compositional affordances that denote human engagement capacities, and place information, as connotations through the projection of socio-cultural human values.

Time is impossible to separate from any human experience, but that sense of time can be sequential or episodic. As we occupy space, we engage a finite and bounded area

with specific composition, scale, and arrangement of forms. This engagement is a direct experience that involves an understanding of time based on duration, or a linear series of connected moments of experience without interruptions. However, as we construct a place identity, we experience both sequential time as well as episodic time. Episodic time recognizes and links memories of past experiences and interactions to enrich our current experience. We can consider people inhabiting an environment and understand that location as a place through reflections such as: what experiences do they associate with which spaces? Where do experiences of dwelling, home or refuge occur? Are there particular places one person returns to but others do not? What is the relationship between that place and the person as an individual? These familiar personal recollections allow us to build a sense of security that associates our identity with that of a specific locale through memory and anticipation. Meaning is created for those individuals involved in the experiences through the use of aspects of the physical environment to trigger reflections or to link abstract associations. Through this association, the physical environment acts as a symbol to hold, represent, and project those idea back into the individuals who invested the original ideas (Backhaus & Murungi, 2009).

Another distinctness between space and place can be seen in the activating image schemas and correlational metaphors. Space, as discussed above, is understood through fundamental spatial descriptions (up, down, front, back, length, width, height) spatial positioning (front, adjacency, vertical elevation), spatial motion (forward, backwards, momentum), and sensory information (visibility, exposure, sensory awareness). Place, in contrast, is a locale whose sense of distinctness is associated with the human capacities of belonging, engagement, and purpose. It layers our experience of space with additional socio-cultural associations such as identity operating through temporal knowledge of memory, prior experience, and recollection along with actions of involvement and preference (Plowright & Adhya, 2023). The basic cognitive operation behind these complex experiences is the experience of a bounded and situated space through both difference and similarity as extensions of the image schema group IDENTITY and its relationship to body schema and body image (Carruthers, 2009; Torras De Beà, 1987).

Difference allows us to distinguish one area of space from another through characteristic features, disruptions in patterns, or moments of contrast. The larger the degree of distinctiveness of a location within its context, the stronger possibility for interpretations of place to develop. However, while one aspect of place is defined through difference, it also requires similarity to exist between the environment and the occupant. Similarity is a projection of our values to see a locale as an extension of ourselves. We relate to that space in a way that builds a relationship through individual associations of belonging and identification. This includes how we evaluate and find alignment between our own values and the compositional elements in the locale as well as past activities and connections with other people associated through memories in that locale. Both difference and similarity require episodic temporal associations to be activated as discrete applications of memory to space associations.

4. Conclusion

At the core of these observations is a perspective of cognitive focus that allows space and place to co-exist without conflict if considered through informational hierarchy, levels of schematicity, and different temporal factors. It also allows the placement of phenomenological positions within a realist framework. While place is prioritized through the transcendental phenomenological experience of an individual, space also contains a significant amount of information about the human experience. Even if space is considered as an "abstract scientific, mathematical, or measurable" description of a locale, that locale is still specific. We can consider how one understands spatial as well as place-based information in terms of human knowledge through a notion such as interiority (Ionescu, 2018; McCarthy, 2005). Interiority, as the sense of being within, can be considered as a phenomenological experience through the feelings of shelter, protection, and a sense of safety. It can be linked with concepts of home as well as dwelling and we can explore personal reflections of places that elicit such a feeling. These memories can be mapped onto current moments in the built environment so to transform a generic location to something linked with a specific human identity – i.e., a place. However, interiority can also be defined through the physical and measurable characteristics of space and, when considered in this way, is no less particular (Plowright, 2020, p. 154). We can identify shapes, recesses, and locations where a sense of interiority should occur through the spatial composition and arrangement of forms in that space. These will be related to human movement, human vision, generic senses of exposure and perceived spatial hierarchy – all basic and fundamental information but specific to locale and unique compositional arrangements. The base information is experiences and knowledge aligned with embodied thinking structures foundational to all humans. This information is less rich than the descriptive and personal reflections created through place, but it is still unique to a context, situation and event which involve specific human interactions.

Space and place, when considered through the foundational structures of schema knowledge, are not dichotomous but parallel and supportive experiences. They both include socially constructed meaning but that meaning is focused on very different content and uses different application of temporal experience (sequential versus episodic). For space, meaning is generated through the location and orientation of a human body in relation to other human bodies and the potential interactions mediated by the physical environment. Even complex social constructions, such as culture, can generate space-based meaning when it involves physical factors such as compartmentalization, containment, proximity, adjacency, and contiguity (Gupta & Ferguson, 1992). The specific compositional arrangements of objects, surfaces and edges in space can communicate a large volume of basic social information without includ-

ing individual lived experiences. Place, as an enrichment, builds on situated spatial experiences through individual interpretations activated through memory and the projections of identity into our surroundings.

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References

Agnew, J. (2011). Space and Place. In *Handbook of Geographical Knowledge* (pp. 316–330). SAGE Publications. https://doi.org/10.4135/9781446201091.n24

Backhaus, G., & Murungi, J. (2009). *Symbolic Landscapes*. Springer. https://doi.org/10.1007/978-1-4020-8703-5

Brandt, P. A. (2004). *Spaces, Domains and Meaning: Essays in Cognitive Semiotics*. Peter Lang.

Caballero, R. (2013). The Role of Metaphor in Architects' Negotiation and (Re)Construction of Knowledge Across Genres. *Metaphor and Symbol*, *28*(1), 3–21. https://doi.org/10.1080/10926488.2013.742840

Caballero, R. (2014). Language, space and body. Sensing and construing built space through metaphor. In J. Bamford, F. Poppi, & D. Mazzi (Eds.), *Space, Place and the Discursive Construction of Identity* (pp. 107–134). Peter Lang.

Canter, D. (1977). *The Psychology of Place*. The Architectural Press Ltd.

Carruthers, G. (2009). Is the body schema sufficient for the sense of embodiment? An alternative to de Vignemont's model. *Philosophical Psychology*, *22*(2), 123–142. https://doi.org/10.1080/09515080902802785

Casasanto, D. (2009). When is a linguistic metaphor a conceptual metaphor? In V. Evans & S. Pourcel (Eds.), *New Directions in Cognitive Linguistics* (Vol. 24, pp. 127–146). John Benjamins Publishing Company.

Casasanto, D., & Boroditsky, L. (2008). Time in the mind: Using space to think about time. *Cognition*, *106*(2), 579–593. https://doi.org/10.1016/j.cognition.2007.03.004

Clausner, T. C., & Croft, W. (1999). Domains and image schemas. *Cognitive Linguistics*, *10*(1), 1–31. https://doi.org/10.1515/cogl.1999.001

Croft, W. (2006). The role of domains in the interpretation of metaphors and metonymies. In D. Geeraerts, R. Dirven, & J. R. Taylor (Eds.), *Cognitive Linguistics: Basic Readings* (pp. 269–302). Mouton de Gruyter.

Croft, W., & Cruse, D. A. (2004). *Cognitive Linguistics*. Cambridge University Press. https://doi.org/10.1017/cbo9780511803864

Gärdenfors, P., & Löhndorf, S. (2013). What is a domain? Dimensional structures versus meronomic relations. *Cognitive Linguistics*, *24*(3), 437–456. https://doi.org/10.1515/cog-2013-0017

Gentner, D., Bowdle, B. F., Wolff, P., & Boronat, C. (2001). Metaphor Is Like Analogy. In D. Gentner, K. J. Holyoak, & B. N. Kokinov (Eds.), *The analogical mind: Perspectives from cognitive science* (pp. 199–253). MIT Press.

Gibbs, R. W. (2008). Cambridge Handbook of Metaphor and Thought. In *Cambridge Handbook of Metaphor and Thought*. Cambridge University Press. https://doi.org/10.2307/1130388

Gibbs, R. W., & Colston, H. L. (2006). Image schema. In D. Geeraerts, R. Dirven, & J. R. Taylor (Eds.), *Cognitive Linguistics: Basic Readings* (Vol. 6, Issue 4). Mouton de Gruyter.

Grady, J. E. (2005). Image schemas and perception: Refining a definition. In B. Hampe & J. E. Grady (Eds.), *From Perception to Meaning: Image Schemas in Cognitive Linguistics* (Issue July 2001, pp. 35–55). Mouton de Gruyter.

Grady, J. E. (2007). A typology of motivation for conceptual metaphor: Correlation vs resemblance. In V. Evans, B. K. Bergen, & J. Zinken (Eds.), *The Cognitive Linguistics Reader* (pp. 316–334). Equinox Publishing.

Gupta, A., & Ferguson, J. (1992). Beyond "Culture": Space, Identity, and the Politics of Difference. *Cultural Anthropology*, *7*(1), 6–23. https://doi.org/10.1525/can.1992.7.1.02a00020

Ionescu, V. (2018). The interior as interiority. *Palgrave Communications*, *4*(1), 33. https://doi.org/10.1057/s41599-018-0088-6

Johnson, M. (1987). *The body in the mind. The bodily basis of meaning, Imagination, and reason*. University of Chicago Press. https://doi.org/10.7208/chicago/9780226177847.001.0001

Johnson, M. (2005). The philosophical significance of image schemas. In B. Hampe & J. E. Grady (Eds.), *From Perception to Meaning: Image Schemas in Cognitive Linguistics* (pp. 15–33). Mouton de Gruyter.

Johnson, M. (2007). *The Meaning of the Body: Aesthetics of human understanding*. University of Chicago Press. https://doi.org/10.7208/chicago/9780226026992.001.0001

Kövecses, Z. (2010). *Metaphor: A Practical Introduction* (2nd ed.). Oxford University Press.

Kuhn, W. (2007). An image-schematic account of spatial categories. *Spatial Information Theory*, 152–168. https://doi.org/10.1007/978-3-540-74788-8_10

Lakoff, G. (1987). *Women, fire, and dangerous things: What categories reveal about the mind*. University of Chicago Press.

Lakoff, G., & Johnson, M. (1980). *Metaphors We Live By*. University of Chicago Press.

Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to Western thought*. Basic Books.

Mandler, J. M. (1992). How to build a baby: II. Conceptual primitives. *Psychological Review*, *99*(4), 587–604. https://doi.org/10.1037/0033-295x.99.4.587

Mandler, J. M. (2005). How to build a baby: III. Image schemas and the transition to verbal thought. In B. Hampe & J. E. Grady (Eds.), *From Perception to Meaning: Image Schemas in Cognitive Linguistics* (Cognitive, pp. 137–163). Mouton de Gruyter.

Martín, A., Trench, M., & Minervino, R. A. (2020). The sensory-motor grounding of the time is space conceptual metaphor. *Avances En Psicología Latinoamericana*, *38*(1), 1–17. https://doi.org/10.12804/revistas.urosario.edu.co/apl/a.6081

McCarthy, C. (2005). Toward a definition of interiority. *Space and Culture*, *8*(2), 112–125. https://doi.org/10.1177/1206331205275020

McKenzie, M., & Tuck, E. (2014). *Place in Research*. Routledge. https://doi.org/10.4324/9781315764849

Norberg-Schulz, C. (1996). Phenomenon of Place. In K. Nesbitt (Ed.), *Theorizing a New Agenda for Architecture* (pp. 414–428). Princeton Architectural Press.

Oakley, T. (2007). Image Schemas. In D. Geeraerts & H. Cuyckens (Eds.), *Handbook of Cognitive Linguistics* (Issue 9, pp. 214–235). Oxford University Press.

Pellegrino, P., & Jeanneret, E. P. (2009). Meaning of space and architecture of place. *Semiotica*, *2009*(175), 269–296. https://doi.org/10.1515/semi.2009.049

Plowright, P. (2018). *Qualitative embodiment in English architectural discourse: Conceptual metaphors and the value judgement of space*. Universidad de Castilla-La Mancha.

Plowright, P. (2020). *Making Architecture Through Being Human: A handbook of design ideas*. Routledge. https://doi.org/10.4324/9780429261718

Plowright, P., & Adhya, A. (2023). *Urban Design Made by Humans: A handbook of design ideas*. Routledge. https://doi.org/10.4324/9781003254935

Plowright, P., & Florence, N. (2021). Space as Situated Analysis: Using embodied concepts to engage social dimensions. *Environment, Space, Place*, *13*(2), 25–50.

Rohrer, T. (2005). Image schemata in the brain. In B. Hampe & J. E. Grady (Eds.), *From Perception to Meaning: Image Schemas in Cognitive Linguistics* (Cognitive, pp. 165–196). Mouton de Gruyter.

Smith, A. T. (2003). *The Political Landscape: Constellations of Authority in Early Complex Polities. In Journal of Chemical Information and Modeling*. University of California Press. https://doi.org/10.1017/cbo9781107415324.004

Torras De Beà, E. (1987). Body Schema and Identity. *International Journal of Psychoanalysis*, *68*, 175–183.

Tuan, Y.-F. (1977). *Space and Place: The Perspective of Experience*. University of Minnesota Press.

Zlatev, J. (2005). What's in a schema? Bodily mimesis and the grounding of language. In B. Hampe & J. E. Grady (Eds.), *From Perception to Meaning: Image Schemas in Cognitive Linguistics* (Cognitive, pp. 313–341). Mouton de Gruyter.

ArchiDOCT 18, 10 (2) TEMPORALITIES

Territory, Horizon and tobacco. Eternal Ethnographic Architecture in Certain Period of Time

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Rationality, in itself, is sufficient to erect buildings of recognised beauty and architectural value. Within the unique cultural landscape of the Vega de Granada in Spain, we propose an analysis of the tobacco drying sheds as articulating elements of its identity. Starting from the syntactic and morphological condition of the elemental architecture that these prototypes represent, the semantic connotations of the area of study are revealed.
The integrating observation in time seeks, in the architectural restraint of the models analysed, to establish the link between this industrial architecture with local reminiscences and the new social order brought about by modernity and its revolutionary principles. With regard to these *houses for curing tobacco*, it is possible to embark on a journey through a series of principles of invariance that constitute the essence of a useful, necessary, temporally indefinite architecture that is faithfully and rigorously identified with the territory on which they are built and which, during a period of time that is reliably dated, they conquered and visually subdued.
For the development of this approach, to the indivisible duality of space-time, a third condition will be added as a catalyst between the two: geometry. In this context, it is proposed to apply the concepts of *geometric chronotope* and *typological chronotope* as guidelines for the methodology linked to the place and the temporal context of the observing agents of these iconic architectural models. The results obtained lead to evocative conclusions about the essential architectural condition of the drying sheds.

1. Introduction

After the break with the Vitruvian tradition and under the ground-breaking principles of the legacy of the German thinker Gottfried Semper in his work *The Style* (1879), with which the spatial envelope becomes the essence of the architectural configuration,[1] it is with Bruno Zevi (1958) when the modern interpretation of this discipline is reached, as the art of space, constituting the *void* or the *confined space* in the raw material of the architect. This is how the numerous theories of aesthetics born at the end of the 19th century define it (Calduch, 2012).

The architecture of the tobacco drying sheds developed in Granada (Spain) during the 20th century, is a visual and tactile experience with which to glimpse the traces of the historical trace and its correspondence with the individual and biological personal time of the observer, i.e. the *geometric chronotope*. This novel conception of observation linked to time and place leads to innovative explorations in the field of architectural contemplation of this landscape context.

The territory under investigation, known as the *Vega de Granada,* is located in the south of the Iberian Peninsula and more specifically in the centre of the homonymous province. It is configured as a vast and perfectly delimited extension, covering a total of forty-one municipalities. The geographical diversity of this Vega, defined by an enormous horseshoe-shaped plain protected by a forceful mountainous topography, generates a diverse landscape, full of systems and sub-systems; an endless territory on which a tight tapestry of small plots is superimposed, crossed by roads, paths, rivers, irrigation channels and irrigation canals. For this reason, for our study, we must refer to *Geography* as "a fundamental discipline for the knowledge of any specific territory" (Sauer, 2006).

2. Objectives

Architecture is a discipline with an evident link between spatial relations and temporal relations intertwined through form in a given place. This is what we are referring to when we use the term *chronotope* (Álvarez Agea & Zazo

1 This is the case of the enclosures of tobacco drying sheds, whose permeability allows for sensory transparency.

Moratalla, 2020); by incorporating the words *geometry*[2] or *typology*[3] into this concept, the etymological meaning is redirected towards the *study of traces or marks in time*. Based on these premises, the incorporation of new concepts such as the *geometric chronotope* and *typological chronotope* is justified as the basis for the connections between space-geometry-territory and space-time-formal typology or form respectively, as architecture is a topical discipline that cannot ignore the terrain on which it is based. On the other hand, the historical nuance that includes the dimension of the *historical architectural chronotope* is also linked to the architectural experience that is developed below and which aims to justify the need for a new consideration of the industrial architectural legacy of the city of Granada.

The *historical architectural chronotope* always appears as a binding tool capable of linking physical time, the biological time of the human being and memory with the place. It thus becomes the bearer of the *zeitgeist,*[4] which allows a gradual change of space in time thanks to the meaning of site (Iovlev, 1997).

In this context, the main objective is focused on demonstrating, from the guided chronotopic analysis and the enhancement of the geometry of the architectural prototype of the tobacco drying sheds as a result of its temporal footprint, the radically essential condition of these industrial models in the heritage legacy of the architecture linked to this cultural space.

With the choice of the so-called *zero architecture model* (Sobrino Simal, 1998), in which the houses for curing tobacco are represented, we have chosen its attribute of a strong and invariable fixed geometry that manages to configure an entire region as a reliable *typological chronotope*, which generates a historical trace of rich and unequal readings in different epochs.

3. Methodology

As a first approach, it is necessary to identify the physical characteristics of the specific area in order to determine the geographical and morphological characteristics of the place, in order to subsequently undertake the ethnographic exploration of the community that inhabits it.

Based on the interpretation of geometry and form as an architectural trace, the condition of the tobacco-drying shed as a *historical chronotope* capable of linking physical time with the vital time of man and memory in the place is argued, using a qualitative methodology of induction.

In order to manage the data, the first step is the territorial analysis of the Vega, programming tours over previously planned sectors based on the visual and conceptual qualities of the buildings and the delimitation of areas defined by their landscape conditions: properties and pieces of land, riverbeds, roads, irrigation canals and geographical features (Fig. 1).

As a tool with which to organise the database obtained, a repertoire of templates is configured in which the invariants that constitute the structuring guidelines of the hypotheses put forward are collected. The establishment of the structuring guidelines together with the constructive characterisation are defined by the elements inherent in the configuration of the chronotope: space, time and form (Bakhtin, 1999).

Subsequently an inductive method of synthesis is applied to the structural units, series and categories defined, which allows for a selective and individual analysis of the buildings chosen from each of them, determining their entity and their particularities, as well as the elements and external agents that make them up. It is a rigorous, versatile and simple form of territorial exploration, of knowledge of industrial architecture as a distinctive agent of an era (Sobrino Simal, 1998), of discernment of its endemic condition and of the proliferation of an architecture that favoured the conquest of the whole territory.

The systematic organization of the contents obtained during the different analytical studies of the landscape comes from the grouping and coordination of knowledge after a previous discernment in different categories, a consequence of the application of the a priori theories concerning it. All of this results in an exact approach to the study of the landscape of the Vega, predominantly from the geographical perspective, along with the help of other empirical sciences, as well as others of ethnographic character which explain the close relations between the human being and its local architecture.

The morphological method fits perfectly in this field of research.

4. Discussion

4.1. Abstraction in tobacco architecture

In architecture, abstraction represents an inquiry into the essence. It is the search of what constitutes, in the architectural work, the nature of things and what always remains. Thus, it represents what is considered as truly important, unaffected by the temporal changes attributed to each living or inert entity.

One of the primary characteristics of the 20th century was the triumph of abstraction over mimesis when the latter is considered a metaphor, comparison or imitation of nature (García Nofuentes, 2017); in other words, the rise in the use of an intellectual operation equivalent to isolating, instead of producing a conscious copy of nature. This enables the process of abstraction to become a new method to generate forms, and which elevates rationalism to the cate-

2 It comes from the Latin *geómetra* and this in turn from the Greek *γεωμετρία* from *γῆ gē* -earth-, and *μετρία* -measure-.

3 It results from the prefix *τύπος*-týpos-, with the meaning of trace or mark, followed by *λογία* -logia-, the connotation of which is -study- or -science-.

4 German word that can be translated as spirit of the time, spirit of the moment or spirit of the age.

Figure 1. Touring and analysing the "Vega of Granada: Tour 4

gory of essential discipline in architecture and art, and certainly of general thought, as commented in *Critique of Practical Reason* (Kant, 1961).

Abstraction represents the rational power and the most characteristic, synthetic and renovating intellectual and formal impulse of all the arts developed throughout the 20th century (Berger, 2005). Unlike the corset imposed by mimesis, abstraction follows the footsteps of the safety of the past, the faith in progress, the significance of the future, rationality and the innovative new forms of knowledge outside the realm of time.

Basically, abstraction is understood as any mental operation in which one separates a quality or characteristic that would be impossible to carry out physically.

When referring to architecture alone and its essential condition of endurance over time, we have chosen, under a formalist perspective, a strong type of building capable of entering mass production in the territorial conquest, thus reaching its condition of *geometric chronotope*. This means that the form leaves a footprint in the place (or topos), which enables us to identify the time of nature and the time of human biology.

Under the consideration that architecture manifests itself through its praxis and reality, there is a very clear fact: it is attributed above all the capacity to organise, to propose an order which, although it may be complex, must in any case be recognisable thus offering a precise explanation of the differences between the circumstantial factors of its creation and its essential issues. According to this author, the more abstract architecture is, the more detached it appears from all the contingent dimensions that surround it, such as its immediate practical utility, the resources employed to build it, or the social, political, or religious meanings temporally attributed to it (Martí, 2000).

In the approximation of the concept of abstraction to the vernacular industrial architecture of tobacco, a sensitive closeness of ideas can be seen. Possibly one of the greatest attractions of this symbol of the heritage of the province of Granada (Spain) is probably its specific architecture, for which it is necessary to understand the purpose of its construction, very different from any other building unrelated to the tobacco industry. The exclusive function they are meant to perform in their respective locations allows them to acquire features that resemble the essence of architecture, the integrity of the concept when practicing an exercise of abstraction. Only space, form and skin mark a territorial footprint in time. Built with the sole purpose of shaping a space with certain environmental conditions, they constitute architecture in its maximum degree of simplicity and purity.

4.2. Invariants

Invariants are defined as basic singularities which are key for architecture to exist and which are obviously conveyed by the architecture of tobacco curing. That way, the aim is to detect those qualities that are crucial in any building regardless of styles, uses, economy, social conditions, culture or specific construction elements (González Ruiz, 2004).

The invariants refer to the type of architecture in which the *elements* themselves lose importance while what the *relationships* are highlighted. They refer to works of architecture whose meaning resides in the entity of these relationships, in their intimate qualities and their profound conception, but never in the individual value of the different elements that compose it.

The investigation of the essence as an architectural property transports us to the guidelines used for these con-

structions in the province of Granada, which are clear examples of architecture stripped of the unnecessary.

These properties, intrinsic and essential, existing without exception, immutable, generic, present in any architecture whatever its character or use, are conceptualized as *invariants*; they are recognisable in the drying sheds and we consider the grouping of their principles into five categories: materiality, space, geometry, topos and chronology.

In the following section we focus specifically on three of them, because of their importance in the concretion of the meaning of chronotope and the relationship with the trinomial: geometry, space and time.

5. Results

Once the field inspection work had been completed, in which more than 400 drying sheds were recorded, the information collected was screened according to the formal, structural and dermal analytical principles proposed in the method chosen for this research. Once classified within the scope of the planned routes (Fig. 1), the resulting data are structured in the templates drawn up for this purpose, one example of which can be seen in (Fig. 2). The comparison between them allows a discussion to be established that responds to the objectives established throughout the study.

5.1. Geometry and matter

All matter has to acquire a certain form.

Presence and permanence are attributes that guarantee the architectural footprint in space and time. The durability of the formal definition, despite the physical alterations of matter and appearance caused by time, guarantee existence. The connection between the momentary variabilities of appearance create temporal relationships and links that shape the essence of being. “Only through duration can we perceive change as an experience of difference” (Deleuze, 2002 in Álvarez Agea & Zazo Moratalla, 2020).

In order to manifest itself and become truthful, every material entity must have an aspect, an external figure, and it must be configured in the dimensions of reality; in this way it will acquire the tangible properties that are attributed to substantiality and consequently to the architectural object.

Form, figure and geometry are terms with similar meanings and very similar popular nuances. Natural matter acquires a definite form, of a casual nature, from the principle of uncertainty, attributable to chance or to the eventuality of forces, conditions and pressures of a spontaneous and natural order. But the matter used in architecture takes over the quality of geometry, whether regular or irregular, and is considered as one of the essential visual properties of form.

Geometry and its constancy in time is the only essential architectural characteristic capable of guaranteeing a particular permanence that also allows change. It is what Gombrich (1983) defines as formal structure: “that which remains constant in spite of the change of aspect”, that is to say: the geometric form is the basis of architectural identity.

5.2. Space

In *Arquitectónica* (1999), the philosopher José Ricardo Morales shares reflections on temporality and purpose as necessary ingredients of the architectural work. He introduces new conjectures about the conception of exact space or absolute space, a space without any kind of impurity of known origin: surroundings, sensations, geometry and proportions. This concept, which he calls *abstract space*, makes it possible to separate the *limpid and essential space* from *perceptible space*, placing it in turn in relation to *the place*, of which it is a part. The first definitions of discernment between the abstract and the concrete are thus established as two senses of the same idea in which ontological time is always present. According to Morales (1999, p. 174), Architecture does not *model* space, among other reasons because space is not a real and perceptible entity, but an abstraction that can be made from very different fields of thought and on the basis of countless assumptions. Therefore, it is not space but the spatial or extensive that is modified, which is something very different.

Outer space, with all its indeterminacy, is considered as a universal, general and indefinite extension, it does not contain any concrete reference, it has no defined human gesture, nor does it register any trace other than that of nature itself. As Morales (1999) warns, in this condition the concept of space does not really exist, since it is still a concept created by man; there is only indefiniteness: “[...] Man errs in the indeterminate; [...] indeterminate is that which lacks traces, data, signs, notes, limits, lines or points of referral, of reference.” (Morales, 1999, p. 40).

Although, as justified in *The Architectural Space* (Muñoz Serra, 2012), the moment we act on the territory, building with artificial elements and/or having other natural ones to shelter us, we are leaving traces on the totality of the spatial or extensive. Thus, the tobacco drying sheds act on the geographical territory, signifying themselves as constructions in which the characteristics of the envelope play a clear role in confining the space, constituting cut-outs of the spatial and contingent reality of the place; they are *Fissures of Context* that fragment time, thus allowing a perception of a changing but continuous reality (Heidegger, 1927/2012).

5.3. Chronology

In reality, or rather in our perception of reality, the passage of time is what it is: relentless and inevitable. With this invariant, the human being evolves without getting to know any other measure of it, although we can intuit it.

Time is both evolution and mutation. It is the dimension that is still unchangeable (at least as far as our senses can reach) and that never ceases to interact with matter. It has no real reference, as it depends on the perception of each being. What for some is distant for others is recent, what for some may mean a continuous present that continues into the future, for others may mean a forgotten past. Similarly, architectural time can be quite subjective. From the moment that materiality is considered as one of the essential invariants of architecture, the substantiality of architecture

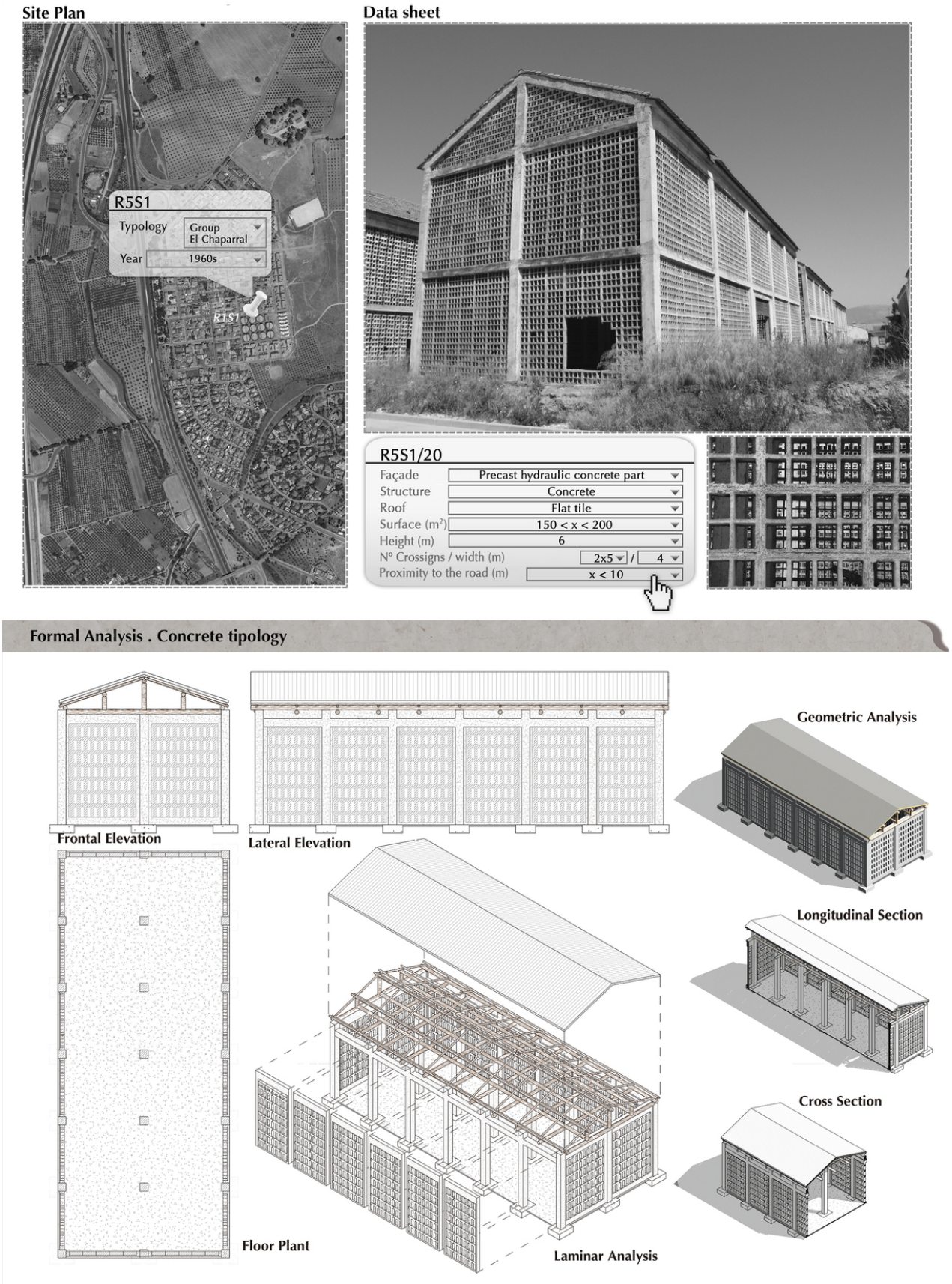

Figure 2. Formal and constructive characterization sheet

is at the mercy of destiny. For architecture in general but for the architecture of the tobacco dryer in particular, time leaves its imprint on the place, it is similarly part of its essential condition and participates in its architecture in very different ways.

According to Heraclitus of Ephesus, the mind organises facts and understands them in an orderly and individualised manner for each subject, allowing the human being to face reality in an orderly way in accordance with the dogmas defined by biological time, which is the one perceived and which interacts with external, natural and ontological time.

The watercourses of time flow metaphorically, depositing matter and memories on the banks. These dejections, ultimately depositories of the events of history in each place, which accumulate on the banks, next to the dry land, form part of the present of the place and of the situation, but they also form part of the river, which flows and maintains the continuity of its course. It is therefore often difficult to discern in an even-handed way what has happened, what is happening or what is to come. To return to the allegory and from another angle of vision, the banks of silt and sand belong to two worlds that inevitably end up excluding each other: the firm, immobile land that ends up silting up and the land that continues to move, dragged by the water, because its place and time to stop has not yet arrived. But there is still a third category of events, which would correspond to those facts and memories that remain for a time, sometimes very intensely, only to continue to be swept away by the current over the years, after leaving a deep mark. This is the group in which all those facts and events related to tobacco culture and the architecture generated for its production and transformation could be included. This gives rise to an architecture that is proportionate to demand, time and place (Guideon, 2009).

Specifically, it is a culture of transfers, bequeathed by the passage of an economic current that half a century later would move on to the region of Extremadura, but not before leaving a very important economic and cultural legacy in the territory of Granada. The arrival of this unique crop in the province is complex and its temporary establishment even more so. The roots are an obvious physical presence, but also of a speculative one, less visible and therefore less known, but equally determining and rich, often objectively valued over the years, when enough time has elapsed to consider its entry into local history objectively.

Time has turned the drying shed into a sturdy symbol; a recognisable architecture of unquestionable historical value that has become greater the more time passes by.

The continuous seasonal cycles cause the aging that is intrinsic to all living beings. The aging of the elements that make up the drying shed makes it necessary to repair construction systems and replace worn or unusable materials, which become the true witnesses to the passage of time. Time intervenes in this case as a creative agent and the envelope of the drying shed as the recipient of its relentless passing.

6. Conclusions

The traditional drying room for curing tobacco is a building with very unique properties. Its interior is ambiguous, allowing one to feel the passage of time and turning the spectator into an actor, making him or her a participant in both its interior and exterior. The skin is so integrated into space and time that it simultaneously separates and unites, effortlessly combining the restricted space (Morales, 1999) with the open space, to the point that one has the sensation that time can break at any moment letting us unconsciously pass through the laws of *abstract space* and time. On the basis of the references by Aegea and Moratalla (2020), we agree with the statement that the awareness of the impact of the experience of time on architecture (Franck, 2016) has highlighted the significance of inhabiting time (Pallasmaa, 2016), generating a relationship between architecture and history that replaces the traditional claim of building forms capable of remaining unchanged over time with the will to build forms capable of maintaining a constant identity in change.

In the recording carried out under the premises established in the methodology, it is possible to affirm that the concepts of space and time, physically inseparable, can maintain geometry as a nexus of union, an architectural invariant that refers to the place and that is only subject to natural chronology. The triple integrating continuity in the *geometric chronotope* constitutes the unity in which the physical phenomena and events of the universe occur. Time is implicit in the architectural abstraction of the model and its transience in perception.

The presence of architectural form, and rather the geometry of it, shapes the identity of the place, leaving a patent and a particularly formal imprint on the territory and on the collective memory, observable through the passage of time. In the calendars of life: architecture, place and matter blend together.

In the architecture of the tobacco curing houses, analysed as a paradigm of essence and timelessness, the geometry remains, but the materiality changes. The place remains, but its appearance is different in each season and over the years. As periods of time go by, what surrounds us changes, but at the same time the human consciousness, with its particular perception of the concept of *time*, observes its flow in any instant activity. That is to say, human consciousness feels the passage of time as a private dimension alien to natural chronology.

Geometry transcends place, materiality and time (Fig. 3) and constitutes the essential property for maintaining architectural integrity and identity both in abstract space and in the particular mind of each human being in his memory and imagination.

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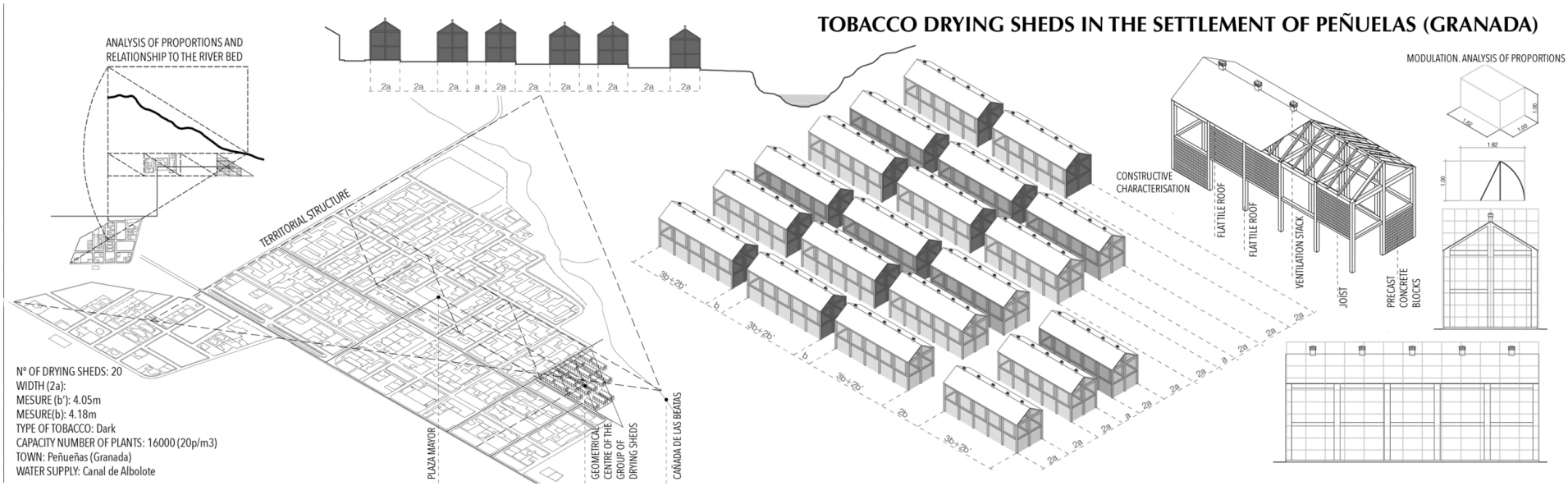

Figure 3. Chronotope of the Peñuelas group of drying sheds, Granada.

References

Álvarez Agea, A., & Zazo Moratalla, A. (2020). El cronotopo histórico. La forma como huella en el parque-cementerio de igualada. *Revista*, *180*(45), 24–37. https://doi.org/10.32995/rev180.Num–45.(2020).art–644

Bakhtin, M. M. (1999). *Estética de la creación verbal*. Siglo veintiuno editores.

Berger, J. (2005). *Sobre el dibujo*. Gustavo Gili.

Calduch, J. (2012). *Temas de composición arquitectónica: Espacio y lugar* (Edición kindle). Editorial Club Universitario.

Deleuze, G. (2002). *Diferencia y repetición*. Amorrortu.

Franck, K. A. (2016). Architecture timed. Designing with time in mind. *Architectural Design*, *86*(1).

García Nofuentes, J. F. (2017). *Los secaderos de tabaco en la Vega de Granada. Una indagación gráfica* [Tesis doctoral].

Gombrich, E. (1983). La máscara y la cara. La percepción del parecido fisonómico en la vida y en el arte. In E. E. Gombrich, J. Hochberg, & M. Blanck (Eds.), *Arte, percepción y realidad* (pp. 13–66). Paidós.

González Ruiz, L. (2004). *El cultivo del tabaco en Granada*. Atrio S.L. Fundación Caja Rural.

Guideon, S. (2009). *Espacio tiempo y arquitectura (El futuro de un nueva tradición)*. Ed. Dossut S.A.

Heidegger, M. (2012). *Ser y tiempo*. Trotta. (Original work published 1927)

Iovlev, V. I. (1997). Chronotopogenetics in architecture. In J. M. Muntañola i Thornberg (Ed.), *Architecture, sémiotique et sciences humaines* (pp. 161–167). Univ. Politèc. de Cataluña.

Kant, I. (1961). *Crítica de la Razón Práctica*. Losada.

Martí, C. (2000). Abstracción en Arquitectura: Una definición. *Revista DPA*, *6*(16).

Morales, J. R. (1999). *Sobre la idea y el sentido de la arquitectura. Arquitectónica*. Editorial Biblioteca Nueva. Universidad de Santiago de Chile.

Muñoz Serra, V. A. (2012). *El Espacio Arquitectónico*. Concepción, Chile. http://www.victoria-andrea-munoz-serra.com/arquitectura.html

Pallasmaa, J. (2016). Inhabiting time. *Architectural Design*, *86*(1), 50–59. https://doi.org/10.1002/ad.2001

Sauer, C. O. (2006). La morfología del paisaje. *Polis, Revista de la Universidad Bolivariana*, *5*(12).

Semper, G. (1879). *Der Stil*. Friedr. Bruckmann's Verlag.

Sobrino Simal, J. (1998). *Arquitectura de la industria en Andalucía*. Instituto de Fomento de Andalucía.

Zevi, B. (1958). *Saber ver la arquitectura*. Tucar Ediciones.

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Critique of Permanence and Linearities in Urban Africa. Perspectives From Onitsha Markets in Nigeria

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Architecture, urban design, and planning in post-colonial African cities are currently produced based on the ideals of permanence and linearities, and often without the recognition of ingenious local spatial configurations. The resulting spatialities are often in contrast to the ephemeral and non-linear configurations amidst uncertainties in these cities. The paper aims to provide insights beyond permanence and linearities through the explorations of the emergent spatial dynamics of urban growth and using Onitsha markets spatialities as a case study. Onitsha is a city in southeastern Nigeria driven by urban markets phenomenon and currently, the third largest urban area in Africa. The markets in Onitsha appear in almost every corner of the city and manifest as ephemeral, periodic, adaptive, and incremental spatial productions, which are shaped by the flux of material flows, contextual forces, and contestations in the city. Findings reveal how these forms of spatialities respond to extreme Otherness in the city, rooted in the contextual space-time fractal cultural logic of the Igbo ethnic nationality in Nigeria. The paper calls for the need to recognize and learn from the various emergent forms of spatialities and towards livable and equitable urban futures.

1. Introduction

Architecture, urban design, and planning in African cities are currently produced based on the notion of permanence and linearities of spatialities, which contrast with the constantly mutating and non-linear nature. Spatiality denotes a socially produced space and a product of the political and economic system that exists primarily in the dimensions of time (Massey, 1994; Sheppard, 2004). The resulting spatialities appear to contrast with the ingenious local practices. Linearity in planning embodies the Cartesian grid that shaped the modernist sub-divisions of land and top-down planning.[1] The grid on an urban scale is reductionist and hardly responds to local contexts and the embodied multi-layered complexity. The paper explores the emergent spatial dynamics and self-organization processes of urban growth in post-colonial African city, using Onitsha markets as a case study. It also aims to provide insights beyond the permanent and linear spatial configurations of the built environment. Onitsha is a city in southeastern Nigeria driven by an urban market phenomenon and currently, the third largest urban area in Africa, trailing behind Cairo and Lagos. The markets in Onitsha appear in almost every corner of the city and manifest as constantly adaptive, periodic, and incremental forms of spatiality, which are shaped by the flux of material flows, contextual forces, and contestations in the city. Traditionally, markets are important sociological landmarks for the understanding of human relations in the city. Earlier scholars provided a technical definition of markets, as a public concourse of buyers and sellers of commodities meeting at a place more or less strictly defined, at an appointed time, and often within a neutral territory between societies (Hill, 1966; Hodder & Ukwu, 1969). They are defined by morphology, operations, access, economic activity, relational condition, and geography *(e.g., Ahia in Onitsha, Suq in Cairo, Markt/Marché in Brussels)*. Markets are seen as the essence of metropolis (Braudel, 1992; Calabi, 2004), as spaces for resistance and

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1 On the grid as the defining tool in the making of North American cities, see Gandelsonas, M. (1999). X-urbanism: architecture and the American city. New York: Princeton architectural press.

mobilization against gentrification, (Gonzalez & Waley, 2013), and as a hallmark of urban life in African cities (Ikioda, 2013; Kinyanjui, 2019). Markets engender diversity and socio-economic life in cities (Janssens & Sezer, 2013; Watson, 2006). They reflect an ephemeral landscape of transaction (Mehrotra et al., 2019), which operate on the edge of urban conditions (Mörtenböck et al., 2015). Urban markets are also linked to various issues, such as food security, urban renewal, access to public space, cultural heritage and tourism (Seale, 2016). They are infrastructures of multi-level exchanges and material flows in cities (Chukwuemeka, 2022).

Through observations, mapping, surveys, archival research, and ethnographic readings of the Main-Market in the city (the largest site among 44 different market clusters in Onitsha) (see figure 1), it was apparent that markets in Onitsha reveal alternative ephemeral and non-linear forms of spatiality, which are shaped by the space-time cultural logic embedded in a contextual specificity of the Igbo ethnic nationality in Nigeria. In this paper, I argue for the need to recognize these forms of spatialities that reflect the organic mechanism of spatial productions across spatiotemporal scales, which are often devised by citizens as ways to cope and claim rights of access to the city. In this case, the ephemeral epitomizes an ontological permanence of spatial productions, amidst extreme otherness and uncertainty in the city. The second section of the paper introduces Onitsha markets in Nigeria. Sections three and four present a critique of permanence and linearities within the disciplines of architecture, urban design and planning in post-colonial Africa, respectively. The paper is concluded with arguments on the need to develop tools and frameworks that reflect the complexity of the local context, and towards livable urban growth.

2. Spatial Configurations at Onitsha Markets in Nigeria

2.1. Ephemeral Spatialities at Onitsha Markets

Ephemeral spatial appropriations at Onitsha Markets symbolize the survival adaptive mechanisms amidst precarious tenure conditions in the city.[2] They account for most trading areas in Onitsha, in response to the uncertainties emanating from exclusions (e.g., eviction, demolition, or seizure of goods). Ephemeral spatial appropriations at Onitsha denotes a way of producing space under uncertainty, which occurs under improvised, periodic, adaptive, and incremental mechanisms (see figures 2 and 3). They are found in almost all corners of the market locations in Onitsha, including segments for merchandise, transportation stops and administrative building of the umbrella body of merchants known as the Onitsha Markets Amalgamated Traders Association (OMATA). Ephemeral spatial appropriations vary from the itinerant traders carrying goods on their heads or with wheel-carts, to the stationary traders with parasols, which could be freestanding or attached constructions to adjoining buildings. These appropriations are often allowed within the market sites by OMATA because the ephemeral traders provide symbiotic services such as food vending, which also limits potential conflicts between shop owners and ephemeral traders. The various identified spatial forms are developed in an evolutionary sense, and exhibit examples of building adaptations while being subjected to constant modifications by the occupants as a function of constant flux of materials through time.[3] Four categories of ephemeral spatial appropriations have been identified at Onitsha, which are *mobile and free moving, mobile and attached, stationary and freestanding,* and *stationary and attached*. Attached appropriations (either mobile or stationary) allow the ephemeral trader to attach oneself to a shop, a fence, or a building under a symbiotic and complementary arrangement with the host. In such a situation, it could be a tabletop in front of the shop, rented from a shop owner by a tenant who is invisible to the government. Mobile and Free moving units are facilitated by different forms of carriage mechanisms. They are mainly pedestrian itinerary hawkers in search of a better location or avoiding potential disruptions from state actors within the vicinity. Whereas Stationary and free standing is when there is a fixed infrastructure like a kiosk but allows for different and constantly changing users. Stationary ephemerals concentrate on a particular commodity in the different sections of the markets.

2.2. Igbo Fractal Cultural Logic

Spatial configurations in Onitsha reflect the networks of market traders' associations with defined ephemeral territories. I made a striking observation on the fractal cultural logic among the Igbo at Onitsha after looking at the ancestral socio-political unit (family), ancestral socio-cultural units of space (settlement), and contemporary socio-economic units (market organizations), in this case, OMATA. This fractal cultural logic among the Igbo permeates every facet of social life, including social relations, and the production of space (see figure 4). Fractals are mathematical concepts characterized by the repetition of similar patterns at ever-diminishing scales found in naturally occurring phenomena (Batty & Longley, 1994; Eglash, 1999; Mandelbrot, 1982). The fractal logic in Onitsha reveals indigenous knowledge systems and spatialities that are different from the current alien planning logic of extreme Otherness used to in shaping the post-colonial urban Africa. Although the physicality and infrastructures in Onitsha markets ap-

2 See Oxford Learners dictionary definitions: Ephemeral — lasting or used for only a short period of time. Temporary — lasting or intended to last or be used only for a short time; not permanent. Permanent — lasting for a long time or for all time in the future; existing all the time. Temporality is time dependent, defined, also not autonomously existent, nor randomly operational.

3 See Brand, S. (1995). How buildings learn: what happens after they're built. New York : Penguin books.

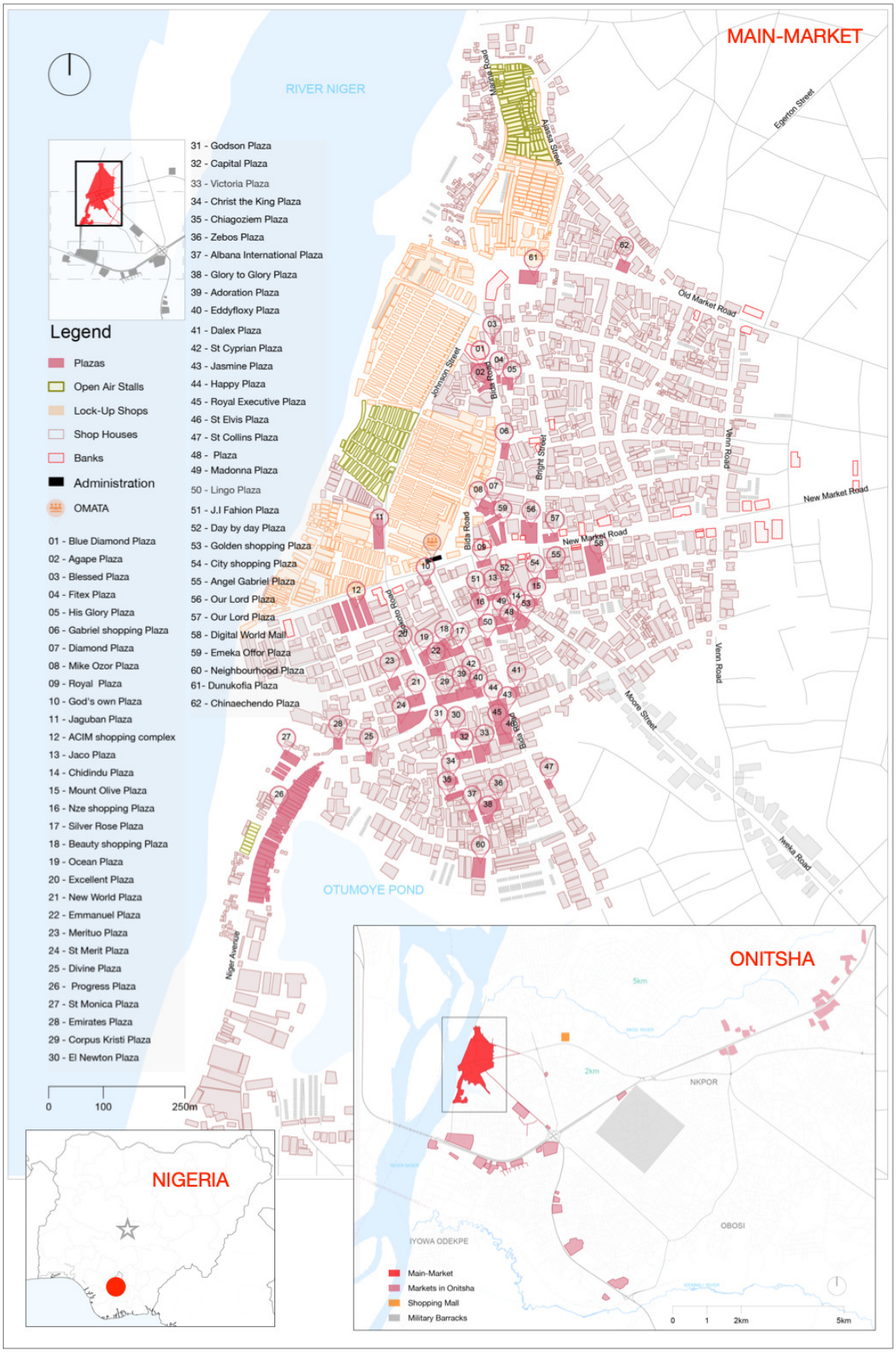

Figure 1. [by Author]

In clockwise: (i) Map of Main-Market showing distribution of Plaza building types locations which have been incrementally developed. (ii) Map of Onitsha showing locations of all the markets in the city, and highlighting Main-Market site. (iii) Map of Nigeria showing location of Onitsha.

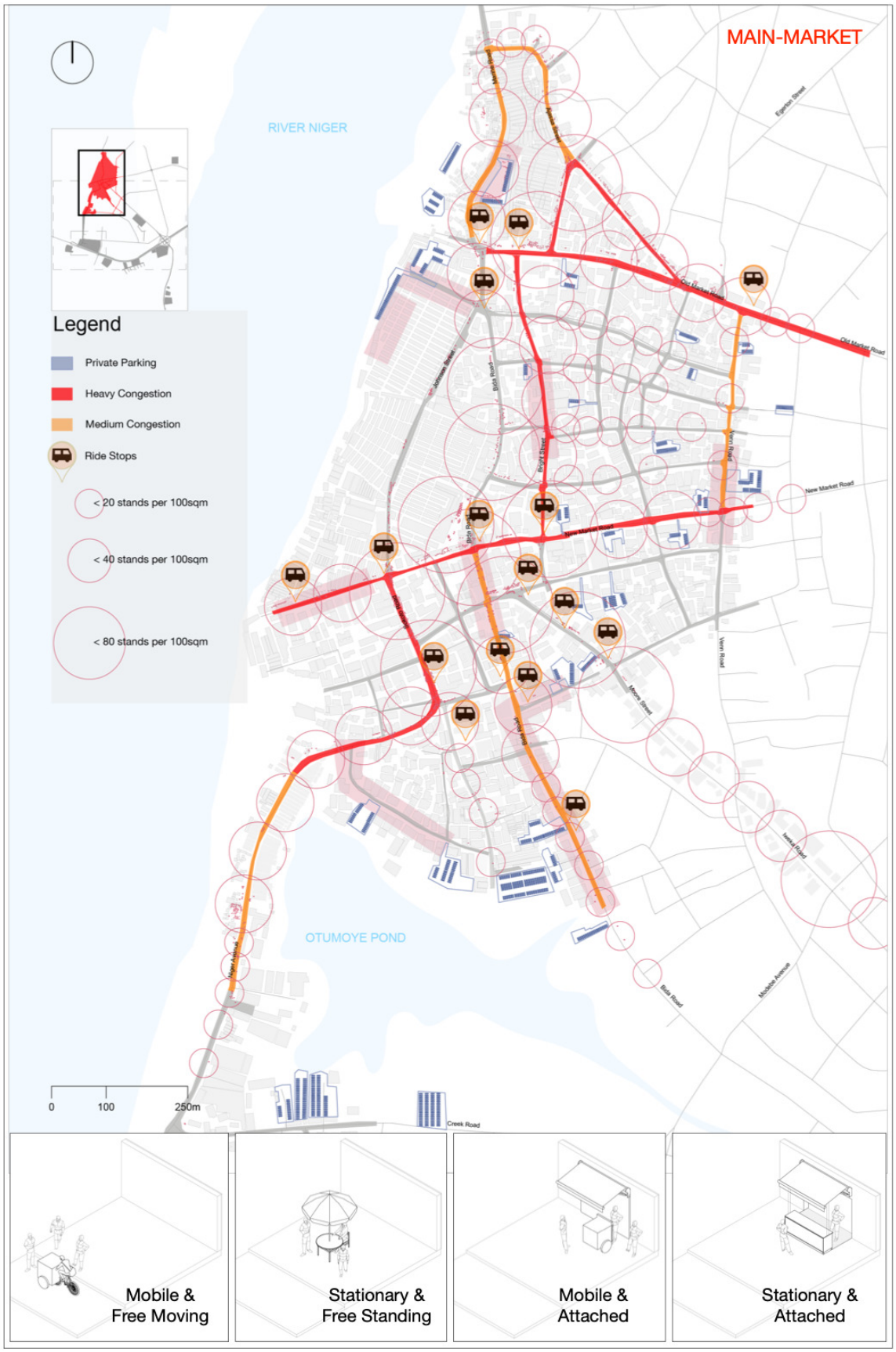

Figure 2. [by Author]

Top: Map of Main-Market showing ephemeral appropriation and major ride (tricycle) stops, and traffic congestion in the market.
Below: Ephemeral spatial forms and mechanisms of appropriations.

Figure 3. [by Author]

Top - In clockwise: Photos showing ephemeral mobile and attached appropriation, ephemeral appropriations along New Market Road in Main-Market on a typical market day, and a Plaza building type with internal orientation of shops.
Below - In clockwise: Incremental spatial production mechanisms. (i) Frame construction of the shops. (ii) Cell divisions and expansion, whereby shops are further divided when access is most important and goods stored away in a warehouse nearby; (iii) Horizontal addition, which happens when there is more ground space for expansions; and (iv) Vertical addition, within an enclosed perimeter.

pear chaotic, on a macro-level however, one can observe an emergent infrastructure of people as networked fractals of spatiality. Baran (1964) presented three types of networks in a dynamical system; as centralized, decentralized and distributed networks. These network configurations provide a lens to visualize the immensity of the Igbo fractal phenomenon in Onitsha. Fractals have been applied in the reading of cities to understand the morphology of cities under architecture and urban design disciplines (Batty & Longley, 1994; Bovill, 1996; Frankhauser, 1998). However, these studies were not extensive on the cultural foundations of the fractals in shaping spatiality. It is culture that produces the physicality as seen on the African continent with remarkable examples of fractal spatial forms and structures (Eglash, 1999). The fractal logic of organization is found in socio-cultural, socio-economic, and socio-spatial aspects of the Igbo society, but is currently not visible in the physicality of Onitsha. The British colonial regime in Nigeria destroyed the fractal logic of spatial productions among the Igbo with the Township Ordinances (Home, 1983, 2019).

3. Beyond Permanence

3.1. Periodic, Adaptive, and Incremental Appropriations

The Igbo believe that no condition is permanent, and there is constant change in the world (Achebe, 2012).[4] Periodic, ephemeral, adaptive, and incremental appropriation in Onitsha denote a way of producing space under uncertainty, and reflect the fluid territorial definitions of spaces in the city. These forms of appropriations in markets have cultural origins and antecedents based on Igbo rest days (four-days for the small villages, eight-days, or sixteen-days for the larger village-group settlements). Ancestrally, daily markets were periodic and typologically distinct (Aniakor, 1978; Nsude, 1987; Okoye, 1997). However, in contemporary Onitsha, daily markets are defined by a seven-day calendar week, hour-cycles, and festive days. Ephemeral trading has a local name, *'Oso Ahia',* which literally translates to *running markets. Oso Ahia* is a market activity that produces transitory spaces from the way traders respond to how goods move in the markets. Ephemeral appropriations in Onitsha demonstrate how cultural and contextual realities of time-space interpretations shape the nature of spatial configurations of place. See narrations by some traders who operate as ephemerals in the markets:

> *Itinerant Vendor 1 — Beverages (Translated to English from Igbo)*
> "I carry my products around the market. They know me well here, so I don't pay anyone. But in some places, they might ask for a ticket. The location depends on what is happening in the city. Some days when there is traffic on the expressways, most of us choose to sell to travelers. They are often thirsty and hungry and need our products. I receive my supply on credit from the warehouse and will balance my sales at the end of each day or the following morning. My supplier is a wholesale retailer for the beverage company. The serious challenge is the environmental Taskforce. They differ from the ones that check on the drivers. These fellows claim they are sanitizing the streets. But we know how to beat them. My friends are currently around Upper Iweka Junction, and we send ourselves messages to alert everyone each time we spot them. I am saving money so I can someday rent and own a shop. Possibly, I will be importing goods from China to sell."[5]
>
> *Itinerant Vendor 2 — Food (Translated to English from Igbo)*
> "I come out on weekdays from 12 noon to 3 O'clock p.m. to sell my *Okpa* (local delicacy). Then I will use the money to buy food for my family. I wake up early between 5 - 6 O'clock a.m. to prepare the food and everything. Some days, when business is bad, I carry the remaining items home because there is no place to keep it. Moreover, it will spoil. So, we eat it at home for that day."[6]

3.2. Beyond Permanence

Permanence appears as the defining prejudice of the modern architecture profession, and generations of architects and patrons who imagined the artistic merit of their buildings as their legacy to posterity have nurtured this prejudice (Chattopadhyay, 2019). Claims of permanence also define the mechanisms of exclusion used in the colonial logic of planning, as seen in Fredrick Lugard's Township Ordinances in Nigeria (Home, 1983), whereby deviations legitimize spatial dispossessions of millions across the world (Chattopadhyay, 2019). Mehrotra and Vora (2021) questions the false notion of permanence as the univocal solution for urbanities, which often differs from the organic constructions of spatiality outside the purview of the State, and massive shifts in demography occurring around the world.[7] These forms of spatial productions point to an urbanism, which leverages on the fluidity, ever changing flux, as a survival mechanism in response to precarious tenure conditions seen in Onitsha. In debating urbanization in the developing world, Unruh (2007) contends on the need to resolve the acute tenure insecurity as a fundamental way of improving the conditions of impoverished and segregated settlements. The often quick-fix approaches, such as forced evictions, often lead to the destruction of social networks and physical assets of citizens. Post-colonial architectural practice in Nigeria has an obsession with the idea of the

4 The Igbo believe that art, religion, and the whole of life is embodied in the art of the masquerade. Life is dynamic, and not stationary.

5 Excerpt from interview conducted on 13 August 2018.

6 Excerpt from interview conducted on 13 August 2018.

7 Mehrotra's (2021) uses the kinetic city to describe an urbanism of flexibility, where openness prevails over rigidity and flexibility is valued over rigor.

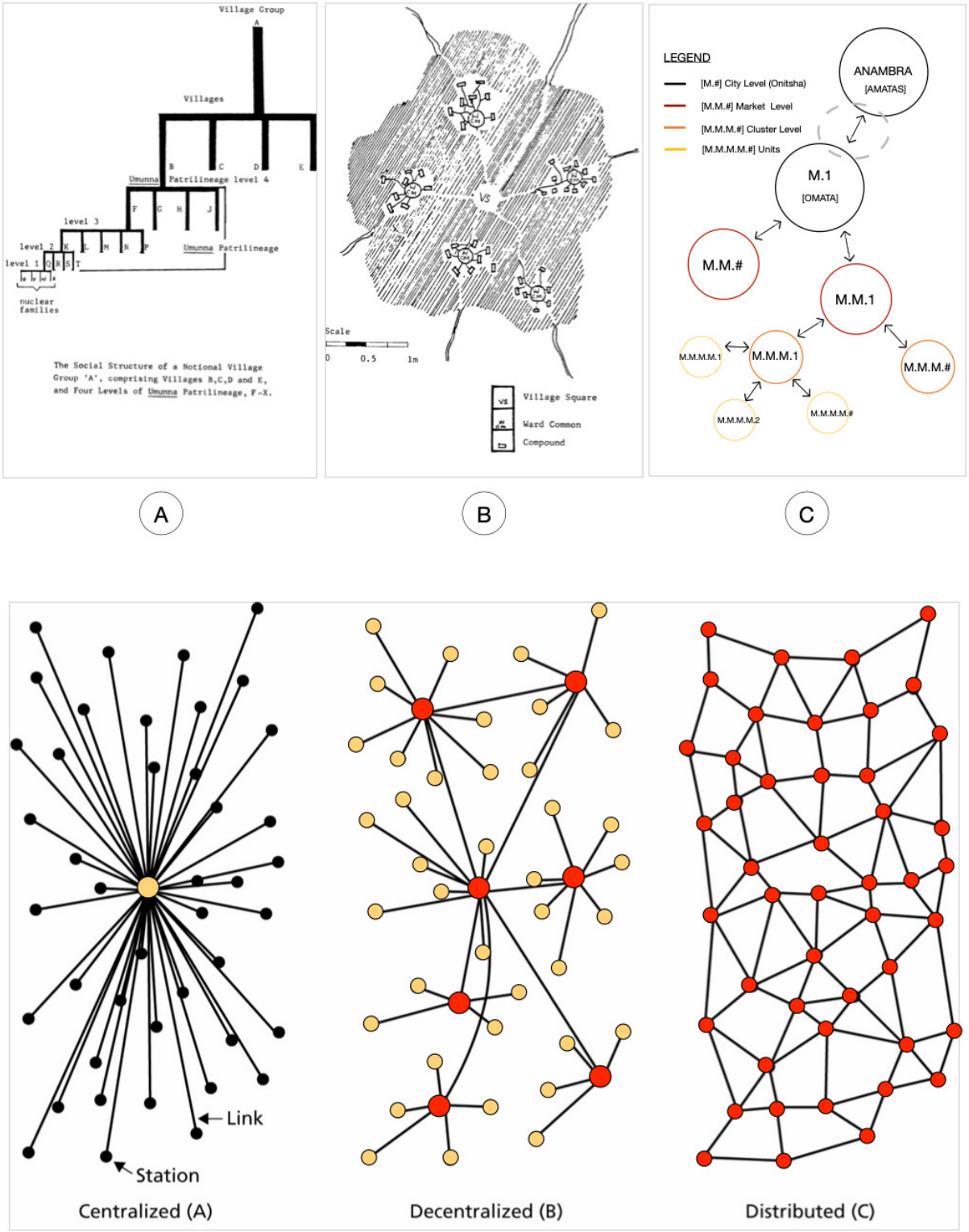

Figure 4. [by Author]

Top: (A) Igbo cultural logical of fractals: socio-political (lineage) [Nsude, 1987], (B) socio-spatial (settlements patterns) [Nsude, 1987], and (C) socio-economic (OMATA) in Onitsha. This fractal logic is currently missing physically at Onitsha, but present socially among the market organizations in Onitsha.
Below: OMATA fractal networks. Using network types by Baran (1964) to demonstrate what is found within the market organization. (A) Network type at Ogbo (segment) level. (B) Network type at market location level among different segments. (C) Network type on the city level among different market locations.

city as centralizing spectacles as part of the colonial relic of the command-and-control planning structure.[8] One of the unintended consequences is that these cities become characterized by incessantly provisional intersections of spatial appropriations that operate without clearly delineated notions of how the city is to be inhabited and used (Simone, 2004). The current ephemeral spatialities in Onitsha demand a re-evaluation of existing planning frameworks which recognize this category, and employ the embodied agency and inventiveness. For example, how can architects and planners work with time, as a potential pathway to the engage with the exclusion in the city and making a case for an open, evolutionary architecture and urbanism?

4. Beyond Linearities

4.1. Fractal Urbanities and Spatialities

Many patterns of nature embody a fractal geometry that is different from the modernist Cartesian grid. Mandelbrot's *Fractal Geometry of Nature* (1982) demonstrated the potential practical applications of such geometry to diverse fields. However, the phenomenon of fractals is not an entirely new construct, as they are ancestrally embedded in the architecture, arts, and settlement patterns of most African societies (Eglash, 1999). They are often in the form of ever-diminishing forms of dwellings (circular or rectangular), or pathways, which reveal indigenous knowledge systems. Eglash (1999) outlined five important components of fractal geometry which are:

- *Scale:* which refers to the attribute of having similar patterns at different zooms of scales.
- *Recursion:* which implies that results are repeatedly returned, as a feedback loop and in constantly repeated iteration.
- *Self-Similarity:* which implies that there is self-replica of the whole, at most of its parts.
- *Infinity:* which means that it is continuously self-replicating
- *Fractal Dimension:* which allows dimensions to be in fractions.

The fractal phenomenon in Onitsha markets exhibits most of these components except to the infinity because it is not, in this context, understood as mathematical phenomenon. This is where the critique of architects using the concept of fractals from some mathematicians is the strongest. For example, Ostwald (2001) on the attitude of architects and the conscious attempts to use fractal geometry to create architecture after Mandelbrot's (1982) publication. Ostwald & Vaughan (2021) further argue that no building or architecture in the real world can ever possess true fractal geometry because it only exists in mathematics, and hypothetical examples such as computer simulations and philosophical puzzles. The reason given was that the concept of fractals in architecture is devoid of this infinity with a physical scaling limit, whereby the self-similarity breaks down completely.

Although one could agree with these critiques on how architects mimicked fractals in their designs, however, the epistemological position on what constitutes fractals in a built environment can be contested with evidence from the African continent. Also, the focus on infinity of scaling does not consider that some fractals occurring in nature, such as plants, animals, snowflakes, do not exhibit the expected physical infinity. Mandelbrot's (1982) central idea of fractals is on the practical applications, using this type of geometry with its *repetitive-diminutive or repetitive-expansive logic* and not only on the theoretical proof of the *infinity of the logic*. The work of Ron Eglash (1999) provides evidence on the fractal dimension of architecture and settlements within the African context, which are not arbitrary, but consciously generated by cultural logic and practices within a contextual specificity. Fractals could be the starting point for future analysis of the physicality and processes of spatial configurations in the African city. On recognizing the utility of fractals and its applications for non-linear spatialities, Batty and Longley (1994) acknowledged the various limitations of Euclidean geometry to real-world systems, which could be substituted with more appropriate geometry of fractals for simulating real world complexity.

4.2. Beyond Linearities

The current mode of spatial productions mandated in contemporary urban Africa is mostly based on Euclidian ideals (of gridiron, radial, and triangular ordering of space), rooted in linearities, and often without reverence for context. Conversely, fractals embody non-linear emergent forms of everyday spatial productions with high dimensionality, as observed in Onitsha. Among the Igbo, *Ala adighi akwu oto,* which literally translates to "land and its borders are never linear." It is a philosophical critique of the linear conceptions of spatial productions. The fractal spatialities in Onitsha markets differ from the simplistic top-down planning principles imposed on the city. Nicholas Nassim Taleb (2012), in his critique of modernistic top-down (irreversible *neomania*) approaches associated with the architecture, urban design, and planning disciplines, espoused the importance of embracing high-dimensionality of fractals:

> "There is some evolutionary warfare between architects producing a compound form of neomania. The problem with modernistic - and functional - architecture is that it is not fragile enough to break physically, so these buildings stick out just to torture our consciousness - you cannot exercise your prophetic powers by leaning on their fragility. Urban planning, inciden-

8 An example in Nigeria is Festac '77 during the 1970s. The most recent example on the city scale is the capital of Nigeria, Federal Capital Territory, Abuja. See (Monroe, 1977).

> tally, demonstrates the central property of the so-called top-down effect: top-down is usually irreversible, so mistakes tend to stick, whereas bottom-up is gradual and incremental, with creation and destruction along the way, though presumably with a positive slope. Further, things that grow in a natural way, whether cities or individual houses, have a fractal quality to them... Everything in nature is fractal, and rich in detail with a certain pattern. The smooth, by comparison, belongs to the class of Euclidian geometry we study in school, simplified shapes that lose this layer of wealth. Alas, contemporary architecture is smooth, even when it tries to look whimsical. What is top down is generally unwrinkled, (that is, unfractal) and feels dead" (Taleb, 2012, pp. 324–325).

Many useful insights could be drawn from the ephemeral and non-linear appropriations of spatial productions in Onitsha. In linear contexts with relatively stable and predictable outcomes, the challenge is often mechanistic in such that problems are clearly defined and broken in smaller structures and solved using available knowledge best practices. However, in non-linear contexts, with unpredictable outcomes, the challenge is high dimensional and emergent. This is because little is known about the challenges, and engagement requires explorative thinking across scales, whereby micro-scale interactions could trigger second-order effects. Spatialities beyond the permanent and linear configurations could provide insights on how to deconstruct, disassemble, and reconfigure for an urbanity in a state of constant flux in contexts amidst uncertainty.

5. Conclusion

The paper presents a critique of epistemological permanence and linearities on spatial productions in post-colonial African cities to reflect urban mutations, rapidity, and scaling challenges, as seen in Onitsha. Spaces are appropriated in ephemeral way, used collectively and periodically, and transformed incrementally to deal with uncertainties in the city due to precarious tenure and exclusion in the city. The challenge is how these observations could be reflected in both pedagogy, policy, and practice. For example, how can ephemerality be used to rethink spatiality and access to the city? What forms of activities require permanent configurations? How can street design, zoning, urban scaling, and structuring of spatiality in the city be structured to reflect the context? There is a need for alternative frameworks and tools to rethink tenure, augment the already existing autonomous practices in the city, and to address the seeming crisis of complexity from an interdisciplinary perspective, and towards a livable urban future.

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References

Achebe, C. (2012). *There was a country: A personal history of Biafra*. Penguin Press.

Aniakor, C. C. (1978). *Igbo architecture: A study of forms, functions and typology* [PhD Thesis]. Indiana University.

Baran, P. (1964). *On distributed communications: Memorandum RM-3420-PR*. RAND Corporation.

Batty, M., & Longley, P. (1994). *Fractal cities: A geometry of form and function*. Academic Press.

Bovill, C. (1996). *Fractal geometry in architecture and design*. Birkhäuser. https://doi.org/10.1007/978-1-4612-0843-3

Brand, S. (1995). *How buildings learn: What happens after they're built*. Penguin books.

Braudel, F. (1992). *The wheels of commerce*. University of California press.

Calabi, D. (2004). *The market and the city: Square, street and architecture in early modern Europe*. Ashgate.

Chattopadhyay, S. (2019). Ephemeral Architecture Toward Radical Contingency. In C. J. W. Swati (Ed.), *The Routledge Companion to Critical Approaches to Contemporary Architecture* (pp. 138–160). Routledge. https://doi.org/10.4324/9781315688947-12

Chukwuemeka, V. C. (2022). *Emergent spatialities in urban Africa: Case study of Onitsha markets in Nigeria* [PhD Thesis]. KU Leuven.

Eglash, R. (1999). *African fractals: Modern computing and indigenous design*. Rutgers University Press.

Frankhauser, P. (1998). Fractal Geometry of Urban Patterns and their Morphogenesis. *Discrete Dynamics in Nature and Society*, *2*(2), 127–145. https://doi.org/10.1155/s1026022698000107

Gandelsonas, M. (1999). *X-urbanism: Architecture and the American city*. Princeton Architectural Press.

Gonzalez, S., & Waley, P. (2013). Traditional Retail Markets: The New Gentrification Frontier? *Antipode*, *45*(4), 965–983. https://doi.org/10.1111/j.1467-8330.2012.01040.x

Hill, P. (1966). Notes on Traditional Market Authority and Market Periodicity in West Africa. *Journal of African History*, *7*(2), 295–311. https://doi.org/10.1017/s0021853700006332

Hodder, B. W., & Ukwu, U. I. (1969). *Markets in West Africa: Studies of markets and trade among the Yoruba and Ibo*. Ibadan University Press.

Home, R. K. (1983). Town Planning, Segregation and Indirect Rule in Colonial Nigeria. *Third World Planning Review*, *5*(2), 165–175. https://doi.org/10.3828/twpr.5.2.4th4321p7722g972

Home, R. K. (2019). From cantonments to townships: Lugard's influence upon British colonial urban governance in Africa. *Planning Perspectives*, *34*(1), 43–64. https://doi.org/10.1080/02665433.2017.1359103

Ikioda, F. O. (2013). Urban Markets in Lagos, Nigeria. *Geography Compass*, *7*(7), 517–526. https://doi.org/10.1111/gec3.12057

Janssens, F., & Sezer, C. (2013). Marketplaces as an Urban Development Strategy. *Built Environment*, *39*(2), 169–171. https://doi.org/10.2148/benv.39.2.169

Kinyanjui, M. N. (2019). *African Markets and the Utu-Ubuntu Business Model: A Perspective on Economic Informality in Nairobi*. African Minds. https://doi.org/10.47622/9781928331780

Mandelbrot, B. B. (1982). *The fractal geometry of nature* (Rev. ed.). Freeman.

Massey, D. B. (1994). *Space, place and gender*. University of Minnesota.

Mehrotra, R., Felipe, V., & Jos, M. (2019). *Ephemeral urbanism: Does permanence matter?* ListLab.

Mehrotra, R., & Vora, R. (2021). *The Kinetic City and other Essays*. ArchiTangle.

Monroe, A. (1977). Festac 77-The Second World Black and African Festival of Arts and Culture: Lagos, Nigeria. *The Black Scholar*, *9*(1), 34–37. https://doi.org/10.1080/00064246.1977.11413937

Mörtenböck, P., Mooshammer, H., Cruz, T., & Forman-Barzilai, F. (2015). *Informal market worlds: Reader the architecture of economic pressure*. NAI010 Publishers.

Nsude, G. C. (1987). *The traditional architecture of the Igbo of Nigeria* [PhD Thesis]. Thames Polytechnic.

Okoye, I. S. (1997). History, Aesthetics and the Political in Igbo Spatial Heterotopias. *Paideuma*, *43*, 75–91.

Ostwald, Michael J. (2001). "Fractal Architecture": Late Twentieth Century Connections Between Architecture and Fractal Geometry. *Nexus Network Journal*, *3*(1), 73–84. https://doi.org/10.1007/s00004-000-0006-1

Ostwald, M.J., & Vaughan, J. (2021). Fractal geometry in Architecture. In B. Siriraman (Ed.), *Handbook of the Mathematics of the Arts and Sciences* (pp. 1–16). Springer International Publishing AG.

Seale, K. (2016). *Markets, places, cities*. Routledge. https://doi.org/10.4324/9781315733234

Sheppard, E. (2004). The Spatiality of the Limits to Capital. *Antipode*, *36*(3), 470–479. https://doi.org/10.1111/j.1467-8330.2004.00426.x

Simone, A. (2004). *For the City Yet to Come: Changing African Life in Four Cities*. Duke University Press.

Taleb, N. N. (2012). *Antifragile: Things that gain from disorder*. Random House.

Unruh, J. D. (2007). Debates: Urbanization in the developing world and the acutely tenure insecure. *City*, *11*(1), 115–120. https://doi.org/10.1080/13604810701200987

Watson, S. (2006). *Markets as sites for social interaction: Spaces of diversity*. Policy Press.

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Anastrophic Architecture: How to Operationalize Architecture to Design Time

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This paper attempts to discuss how new algorithmic methods from the field of artificial intelligence (AI) lend new concepts of temporality to architecture. The paper examines how this meditation is changing the prevalent logic of time and what consequences this might have on design methodologies and our current understanding of history.
First, the paper proposes that theories of time have a meaningful and underappreciated relevance in architecture. Consequently, it reveals the transformation of time, rather than objects or forms, as a concept within the discipline of architecture. Then, in comparing the current discussion on presentism versus algorithmic-based preemption as a new phenomenon of the 21st century, the paper addresses contemporary time theories and identifies an attempt to develop a new understanding of temporality in architecture derived from those theories.
Several architecture- and design-related projects are discussed to illustrate how a certain understanding of time is reflected in architecture, revealing that linear approaches are only illusory effects imposed by human narratives and biological analogies and not a representation of the direction of time or of what time really is within the discipline. Instead, the application of AI tools and a machinic view shows architecture to be a time complex. This discovery leads to an investigation of the possibility of operationalizing architecture to structure time differently and create architectural objects' own temporal logic and not the reverse.
The paper concludes by illustrating the potential of such a reading to overcome the chronology implicit in a Eurocentric framework and the promise of pursuing an explicitly transcultural and non-chronological approach instead.

> *"Time conquers all things ... all-conquering, all-ruining time ...*
> *God help me, I sometimes cannot bear it."*
>
> Leon Battista Alberti, *De re aedificatoria*

1. Introduction

"What then is time? If no one asks me, I know what it is. If I wish to explain it to him who asks, I do not know." This quote from the philosopher Augustine (397 C.E.) describes our relationship to time better than almost any other. We know intuitively that every moment flows from the future into the past and is thereby briefly captured by our perception: This is the present. However, as soon as we try to verbalize this felt truth, contradictions emerge. Augustine laments:

> I know that if nothing passed away, there would be no past time; and if nothing were still coming, there would be no future time; and if there were nothing at all, there would be no present time. But, then, how is it that there are the two times, past and future, when even the past is now no longer and the future is now not yet? (Augustine, 397 C.E.)

Time can truly twist your brain. In architecture, time often plays a subordinate role, as space is at the center of most considerations.

2. Theories of Time

Architecture and space, on the one hand, and movement and time, on the other, were not discussed in context until far into the 19th century. Pyramids and cathedrals represent attempts, or perhaps the desire, to overcome time. Alberti's aim to establish a humanistic authority over time is understood as a justification for the rejection of time in his architecture, specifically, for the architect to control and modify it rather than be driven by it. The opportunity to expand time through design, condense the temporal through the creation of architectural artifacts, and, finally, implode or reverse time based on the apparent persistence of the final object implied the ability to build against time. This view emerged from Alberti's recognition that monumental buildings require a durational approach. According to him, it would take time to guarantee that the materials and building techniques were "suitable" in terms of duration (Trachtenberg, 2005).

Increased production and travel speeds and new technical tools and machines raised the question of a changed relationship between time and space in the 19th century. The overcoming of long distances (compression of space) in a comparably short time by railroads and telegraphy led to the introduction of universal time, replacing the cyclical time concept of the Middle Ages with a gradual linear one—clock time. The increasing mobilization of society that accompanied the automobile and airplane brought about a change in the reception of the architectural environment and its relationship to time and space. Simultaneously with these considerations, Futurists and Cubists abandoned perspective as the generally accepted form of representation of real three-dimensional objects and incorporated speed, simultaneity, movement, and time into their compositions.

Movement was an important theme during the 1920s, and time patterns came into play as different types of movement. A further development of the traditional idea of the spatial sequence, this concept had existed at least since the Baroque period. However, while Baroque architects described the spatial sequence as a series of discrete elements, the space defined by Sigfried Giedion in relation to modernity was continuous (space as path) (Giedion, 1941). Giedion's principle of spatial penetration is necessary for the perceptional shift from spatial sequence to continuous space; however, subjects in motion—that is, the overlapping movements of spatial penetration—were still missing in his work. In the 1930s, Giedion elaborated this concept in the United States as a modern theory of space, which he understood as a synthesis of an archaic model of space, which essentially starts from the interior, and an ancient model of the exterior spatial realm. The modernist principle of the interpenetration of interior and exterior can, of course, be illustrated very well by the architecture of *Neues Bauen*; however, it does not refer to the superimposition of frequency patterns or event patterns but is still conceived in static terms. With Cubism, the new optical time period became conscious, leading to the shift away from the perspective conception of space inherited from the Renaissance. The realization of the fundamentally changed conception of space only enabled the understanding of newer architecture.

The self-organizing processes of the *formation* of forms became the dominant theme of the second half of the 20th century. Logocentrism and reductionism came into crisis. To summarize, this is expressed in the discussion of two questions: what is form—or an object, and what is time? Self-organization is a euphemism for living and, therefore, refers to the biological metaphor of time, to which I will return later. It is not the individual elementary particles, the "components of matter," but their constellations, their interactions, their synergetic behavior, and their organization that decisively reach an ever-higher degree of complexity. Again, the concept of time plays another key role. In the natural sciences—dominated by mathematics, time is theoretically always reversible, yet Ilya Prigogine (1977) insisted that life and time are irreversible and, therefore, cannot be modeled as mathematical equations.

Given self-organization, other approaches to modeling become necessary. It is not a matter of object models but of those which capture the processual character of a spatial object in the time stream. Sanford Kwinter, in his book *Architecture of Time* (Kwinter, 2001), studied the conception of time and its relation to artistic forms and, less specifically, to architecture in the second half of the 20th century. He explained therein the transformation of epistemology based on absolute time into the concept of field theory and the idea of the physics of an "event," theorized against the background of thermodynamics. Thus, he intended to introduce a different idea of time not based on a linear, chronological understanding. I would argue that he only succeeded in doing this by imploding the entire time horizon to the present, a spatiotemporal phenomenon that occurred through the development of digital technologies from the middle of the 20th century. David Harvey addressed the condition of placeless simultaneity as early as the beginning of the 1990s with the concept of *time-space compression* (Harvey, 1990), which still has an effect today. Different expressions of this current temporal phenomenon can be found depending on the discipline. The following section aims to present the concept briefly but does not claim completeness, as this would exceed the scope of this article.

3. Presentism and Preemption: On Current Theories of Time[1]

The French historian, François Hartog, introduced the concept of "presentism" and described this order of time as an omnipresent present—one in which everything is available, nothing passes, nothing is expected or striven for, and where immediacy alone has value (Hartog, 2015). With this new chronotope (Bakhtin, 1981), the present has become the favored temporal category. "This present is a devouring present," wrote Christine Ross. "[In] relation to [it] the engendering of historical time seems suspended," while the future is inhaled into the present (Ross, 2012, pp. 13–14). We can find similar arguments in architectural theory. Here it is argued that temporal distinctions have grown irrelevant in the presence of technological possibilities, in which everything can theoretically be stored, archived, and retrieved within a matter of milliseconds or even nanoseconds (an ever-available past).

Consequently, it is argued that the past, present, and future all equally lead to the dissolution of time and subsequently to "the end of history" (Carpo, 2018), or, at least, the history that Nietzsche defined in the summer of 1873 as *wirkliche* history. By that, he meant that *forgetting* is an

1 I have elaborated on this topic in more detail in *Untimely Architecture* (Mayrhofer-Hufnagl, 2022).

essential part of keeping the future open, as the past can be "invented" anew, which, in turn, opens up another future (Nietzsche, 2021, p. 611). The omnipresent present that underpins our cultural condition has no beginning and no end, as everything is always accessible, and nothing can be forgotten, as Carpo (2018) pointed out; therefore, it is no longer characterized by the directional vector of historical development, as the vector is entirely eliminated. The problem is that because the present has no temporal horizon other than itself, it only engages in self-reproduction. "Today, we are stuck in the present," declared philosopher and cultural critic Boris Groys. In his article, "Comrades of Time," he asserted that "[the present] reproduces itself without leading to any future" (Groys, 2009). Thus, we are confronted with an infinite present, wherein everything is continually evolving, but nothing truly novel is achieved.

The main problem with presentism is that it is an inadequate methodological tool or metaphysical claim for addressing time scales that fall outside of an anthropocentric view of activities and processes on which human activities depend, as Richard D. G. Irvine analyzed very precisely in his book *An Anthropology of Deep Time* (Irvine, 2020). I argue that the same holds for the micro temporalities (Ernst, 2016) inherent in the operational structures of computational media that affect our everyday lives.

Like these long spans of time, we also deal with the operational logics of technological media, such as preemption, in which the future is anticipated—*futurum exactum*—and is directly able to act recursively on the present. Most people have experience with preemption through entities such as Google, Amazon, and Facebook, which offer ads for products they did not even realize they wanted—an algorithm made them aware of their desires by preempting them. In other words, one creates a scenario, merely speculative at the outset, which then alters the present. Some scholars have argued that this reverses the arrow of time (Avanessian & Malik, 2016); however, one must keep in mind that an automated and predictable future is initially based on the linear continuity of time, and what is finally reversed is less time itself than the cause–effect relationship that deviates from the rigidity of temporal linearity.

To briefly summarize the broader topic, which exceeds the scope of this article, although contemporary time theories aim to find non-linear temporal models to replace traditional chronology, their performance still adheres to the historiographical model and the narrative ordering of events. This view also applies to Sanford Kwinter's theory of time (2001), which is based on the dynamic principle underlying the biological model of morphogenesis. For all its pluralistic evocations, his theory on time remains ultimately linear, as immanent differences are constitutively gradual, intense differences that constrict nature and all its parts in their diversification into the (ultimately unbroken) unity of becoming. While I admire Kwinter's theory, I agree with Georg Kubler that a biological analogy is of limited use for art and architecture. In considering algorithmic technologies, I would like to suggest a theory of time that follows an archaeological mode rather than a historical one. In other words, I agree with Mario Carpo, who questioned the narrative of memory. However, while he did not offer an alternative, I propose a calculated memory, which I will first illustrate through a historical example that offers a different temporal approach.

4. Anastrophic Architecture

As architects, we are accustomed to projecting a (near) future and proposing alternatives that speculate on the present. However, the reverse is less common. That means, these alternatives derived basically from the present and are based on "what is" and "what has been" as opposed to "what could be" and "what could have been." The following projects exemplify methodologies that render the prevailing understanding of chronological time untenable by swapping the stages determining temporal directions. For example, Susan Dixon described Piranesi's *Il Campo Marzio* as an example of producing new conjunctions of space and time by manipulating chronological time in the engravings of ancient Rome using presentation techniques (Fig. 1). The past became recursive:

> I will posit that this way of envisioning the past in the mid-eighteenth century was a necessary leap for a culture that for centuries had made an industry of its past, by having it appropriated, copied, displayed, sold, and restored in a multiplicity of ways and for a wealth of purpose. This new ancient Rome past, more distant and less knowable than the old one, was harnessed as a useful tool for the papal cultural politics of the day. (Dixon, 2005, p. 116)

Piranesi's interventions sanctified the relics, making the past seem even more distant. The ichnography was "temporally out of synch with the process of historical narration," Dixon noted. It did not show a specific moment but rather a hybridization of different times, "a kind of uchronia. Some buildings which could never have coexisted at the same historical moment are here rendered peacefully together" (Dixon, 2005, p. 116). Thus, Piranesi illustrated that architectural objects are temporally contingent, impure, and capable of triggering and combining multiple times and temporalities. Certainly, Piranesi's example dealt exclusively with the vertical dimension of time: the relationships among the past, present, and future within a unified Western history.

In contrast, a more recent project initiated by the Metropolitan Museum of Art in New York (MET) in cooperation with Microsoft and MIT, which began with a hackathon session in December 2018, also addressed the horizontal dimension of time. The prototype, called "Generist Maps" (Fig. 2), was based on the idea that there is no single (Eurocentric) "art" and that art, created in different cultures throughout thousands of years, is a mutable space (Fenstermaker, 2019; Gen Studio, 2019). The project was based on the following premise: all objects in all the museums worldwide represent only fragments of the art that has ever been created. Not even the most extensive collection can convey a comprehensive picture of art history. Therefore, the objects available to us are metonyms for much larger concepts and ideas. However, with the help of neural networks, it will

Figure 1. Giovanni Battista Piranesi, Ichnographia Campus Martius, 1762.

Published in his book *Il Campo Marzio dell'Antica Roma.*

be possible to speculate about and imagine works of art that may have existed in the past, based on knowledge acquired from works of art that remain. Generist Maps "mark" both existing works of art in a collection and position new speculative objects in between. This project is based upon a resourceful and creative strategy to recapture a missing dimension and appears to be a promising field of scholarly activity.

Based on the knowledge of how and when certain objects existed, an algorithm deduces possible variations on how they *might have existed*, though they can also be read as objects that *could exist* in the future. This speculation about and imagining of different items between two known ob-

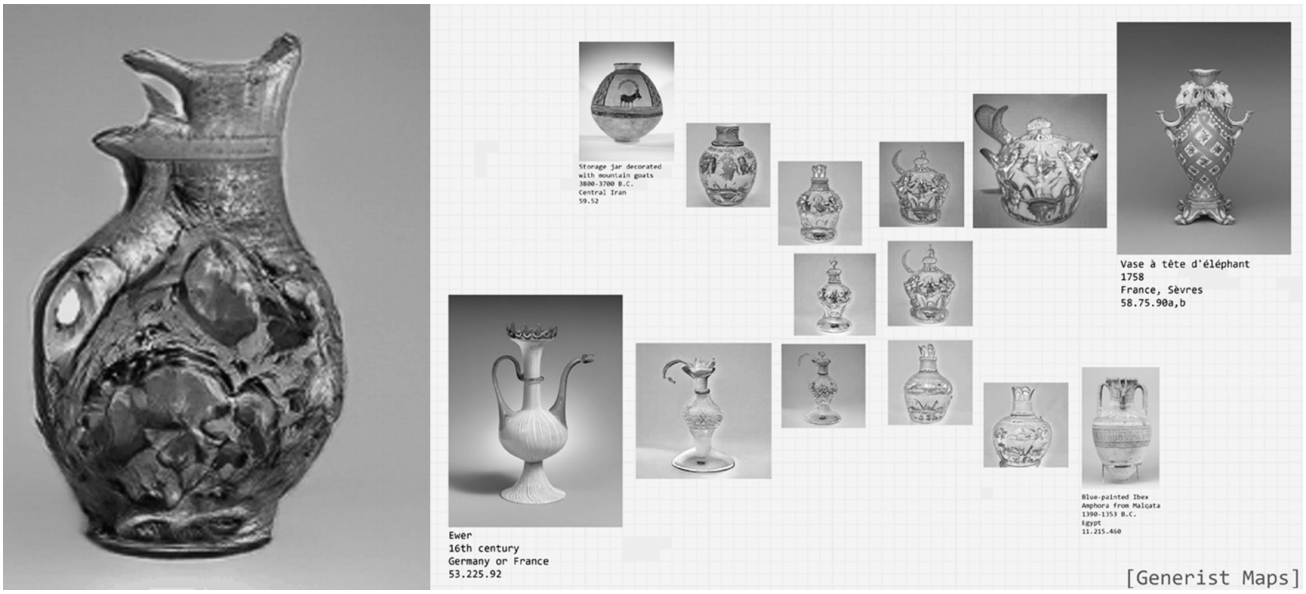

Figure 2. This diagram illustrates the "topographic map" generated by Generist Maps.

At each of the corners are vases or ewers in The Met's collection. The objects in between are inferred from the latent space by the GAN. Image courtesy Sarah Schwettmann.

jects yields a contingent object. Nevertheless, Generist Maps is not an attempt to present an all-encompassing art history but to facilitate a more careful look at art, art history, and cultural production. The researchers and curators at the MET are convinced that deep learning can help with understanding collections and objects from points of view that are more aligned with ancient and non-Western ideas of art and image-making. Artificial intelligence (AI) in this context has the potential to challenge traditional ideas and entrenched notions by proposing new configurations and demonstrating how multiple points of view can be considered simultaneously. The resulting recombinant objects open completely new areas of aesthetic research.

Subsequently, in the experiments on the architecture of the city (Fig. 3), I adopted the approach of including the vertical and horizontal dimensions of time. In short, the thesis is that neural networks can reveal new speculative cities present in existing ones but invisible to the human eye. To this end, cities scattered across the globe and embedded in distinct cultural contexts, each with various temporal layers, were hybridized. What makes these experiments so appealing is their dataset: remote sensing technology makes hundreds of thousands of cities available online. A vast collection of architectural and urban forms, spanning millennia, offers a different perspective on what defines human cultural creation to that of a crowd-sourced collection such as Wikipedia, which is biased toward popular architects and art forms, mostly European models. In these experiments, the neural network examines urban configurations and infers the so-called "latent space" between images by speculating about intermediary ones. Computational neuroscientist Sarah Schwettmann, one of the contributors to the Generist Maps project, explained the process as follows: algorithms can extract and internalize the formal features "as well as the historical evolution of collectively, iteratively produced cultural artifacts…and suggest what the rest of that space could look like" (Fenstermaker, 2019).

A close examination reveals similarities to Georg Kubler's methodological approach but expands the scope of possibilities immensely. In *The Shape of Time*, Kubler (1962) developed a historiographic model of art that questioned the cultural and temporal restrictions and hierarchies of previous approaches to art history and tried to overcome them. Dismissing the time-mapping notion of progress in favor of more chaotic models, Kubler showed that artistic innovation, replication, and mutation never unfold in a single unbroken timeline. In particular, he criticized the concept of "style" as too monolithic and advocated instead for a historical temporality inherent in art itself.[2] The originality of his analytical framework emerged from his focus on pre-Columbian and Ibero-American artifacts. While doing his research, he realized that the established methods of art history were primarily developed in and for the fields of Western culture. They were not helpful to his work, and this caused him to try an explicitly transcultural approach (Kubler, 1962).

The approach Kubler used emphasized aspects of the artifacts themselves. In his model, art history becomes a story with its own logic: the developmental processes embodied in the artifacts are not limited to specific epochs or regions and unfold discontinuously with numerous and sometimes lengthy interruptions. For Kubler, history is knotted: it changes direction, falters, starts up again, and offers a nar-

2 An approach pursued by Aby Warburg and, later, Peter Osborn.

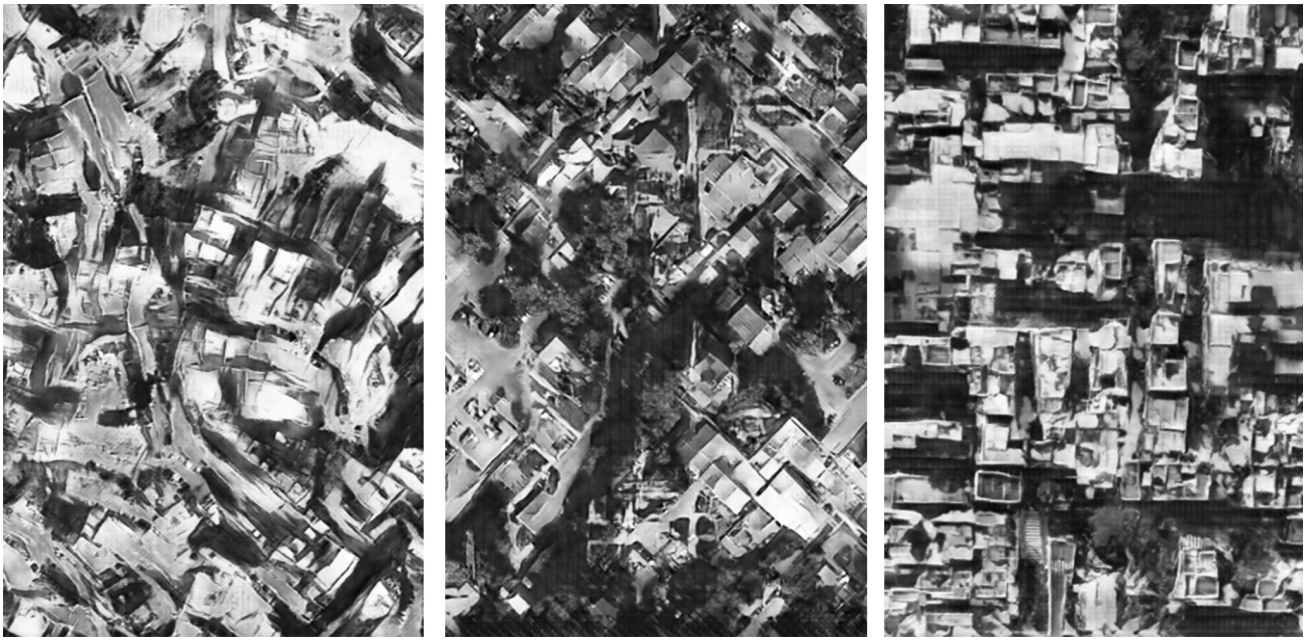

Figure 3. Samples from the latent space of a custom Generative Adversarial Networks (GAN) trained on aerial images of cities to teach our network a possibility space of cities.

We investigated the possibilities to identify temporalities as a intricate entanglements in a latent space of situations. The ongoing journey through this synthetic space of urban depictions reveals the temporal complexity of the architecture of the city. Image courtesy by the author and Benjamin Ennemoser.

rative incorporating connections and detours. In his view, a chronological-linear history based on the presupposed continuity of organic growth and progress can hardly do justice to non-European phenomena. Kubler radically rejected the template of evolutionary biology we find in Kwinter's theory, as explained above. Instead, he worked to bring the breaks and temporal and cultural shifts into focus. His book explored innumerable ways of understanding the relationship between the past and the present. Instead of using style as a reference point, he employed speculation, detailed observations, and comparisons. In this sense, Kubler can be viewed as being out of sync with time—but not only because of his non-linear history model and his entropic development scheme of a "finite world," which anticipated approaches that gained currency in the context of globalization debates in art studies during the 1990s.

In today's global art and communication systems, the consideration that Kubler gave to non-European artistic positions and cultural transfers has become increasingly important. Put differently, the usefulness of an art and architectural historiographical method based on an absolute and linear time needs to be questioned in the context of a globalized world. Historic realism as we know it today is a creation of Western (male) modernity—for many centuries prior to its occurrence, creative depictions ignored proper chronology (Nagel & Wood, 2010). Therefore, neural networks open a completely new possibility for Kubler's approaches, facilitating consideration of the temporal intricacies at play in all artworks and architecture and enhancing the non-linear time model Kubler developed.

5. Architecture as a Temporal Complexity

Generist Maps and the experiments on the city do not attempt to identify a transhistorical *style* but rather present a new kind of "montage,"[3] one that assembles various forms, despite time differences, and creates unusual combinations that enable us to speculate about and re-imagine the past and a new and unknown future. This type of *seamless montage* must be understood as the superposition of fluctuating weaves on a micro-level of formal criteria, creating new art and architectural objects. These outputs can be read as a time complex[4] containing a past invisible to us and an unknown speculative future.

3 Martino Stierli's (2019) book provides a comprehensive explanation of the distinction between montage and collage.

4 While Peter Eisenman speculated on time in architecture in various works, I would like to highlight his recently published book *Lateness* (2020), in which he discussed temporal ambiguity. This concept is particularly revealing in its comparison to Robert Venturi's complexity of form and underscores the current paper's argument. Eisenman explained how "complexity had become an important critical tool after the modern," and in so doing, Venturi looked both "forward and backward in time." Eisenman then argued that "in today's context, however, the digital facilitates the production of complexity," thereby losing its usefulness as a critical tool. Through "advances in digital software," he wrote, "contemporary architecture produces increasingly more exuberant forms, each one just as anomalous as the last, creating a conceptual milieu that is ultimately homogeneous." He concluded by stating that the critical mode no longer lies in the creation of complex forms but in a temporal complexity nested within the concept of lateness.

Piranesi's *Il Campo Marzio* has been considered a "confused montage of fragments and spaces" (Allen, 1989; Boyer, 1994; Eisenman, 2000) of different tempor(e)alities, synonymous with the beginning of the modern understanding of space (Scully, 1974). Interestingly, to examine multilayered temporalities, montage (as for instance theorized by Benjamin, Warburg, Eisenstein, Didi-Huberman) as a methodology can address discontinuities and complex (sometimes contradictory) interrelationships. In addition to being a design methodology for combining heterogeneous objects, it is also a form of non-linear historiography and critique (Didi-Huberman, 2003). Distinct from the analytical approaches of classical art and architectural history, it is an architectural history that no longer focuses on "great" authors or "great" works. Instead, it is centered on the architecture itself. Georges Didi-Huberman, who conducted a meticulous investigation of Warburg's project, even stated that "interesting history is only to be found in montage," which he went on to equate with anachrony.[5] Jacques Rancière made a similar argument:

> An anachrony is a word, an event, or a signifying sequence that has left "its" time, and in this way is given the capacity to define completely original points of orientation (*les aiguillages*), to carry out leaps from one temporal line to another. And it is because of these points of orientation, these jumps and these connections that there exists a power to "make" history. The multiplicity of temporal lines, even of senses of time, included in the "same" time is the condition of historical activity. (Rancière, 2015, pp. 47–48)

In this respect, neural networks offer a new way of "making" history, as Rancière noted, or, as I would describe it, designing time. It is precisely the *aiguillages* that are significant, and that can be designed thanks to a calculable memory as a *seamless* transition that is, however, constantly changing, as each specific point can be addressed differently and thus can be entangled and related to different temporalities.

Therefore, while montage has always included a time element, and thus, a polytemporality that adheres to it, let me again clarify the difference between Piranesi's *Il Campo Marzio* and the concept of montage of the early 20th century to what I have suggested here. By juxtaposing different temporal fragments, Piranesi produced friction and a provocative argument or meaning (Tafuri, 1987, p. 59). However, it is the dialectical tension produced by exposing the seam that allows the viewer to critically analyze the composition of the various temporalities and reconstruct the friction through intellectual reflection. In short, Piranesi's "montage" relies on chronology to generate dialectical tension through temporally disparate fragments. The montage presented here, on the other hand, hides the seam and merges the fragments into temporal complexities. The friction does not arise on the canvas itself, as the seam shifts to the conceptual level and prompts the viewer to scrutinize the generated city in the montage, evoking what Carrie Lambert-Beatty (2009) has called *parafiction*.

Unlike Piranesi, who generated provocative architectural representations by juxtaposing disparate times (by employing an uchronism), I am interested in uncovering what kind of odd time compositions architecture itself creates. Thus, instead of operating with time, as Piranesi did, the formal characteristics of the numerous architectural objects from different cities across the planet are used, regardless of their temporal attribution. The AI thereby draws on Kubler's theory. The seamless montage, which appears at once familiar and unfamiliar, is created by the neural network internalizing and compressing the formal features of the different architectural pieces created by humans over thousands of years while speculating on the space in between and generating pieces that fit somewhere between existing objects.

6. Conclusion

To conclude, I would like to reiterate that time has a substantial and underappreciated relevance in architecture. However, in architecture, we tend to focus primarily on the transformation of things, objects, and space rather than the mode of time itself. These metrics have become so natural to us that we read architecture, in Panofsky's sense, using the clear demarcation of epoch styles, thereby privileging the historical and strictly chronological (Western) perspective. However, such a linear conception of history is considerably less useful now, given the current conditions of an intensified planetary interconnectedness.

In this context, the methodological problem raised by Georg Kubler—considered the first global art historian—regains relevancy. The technology of neural networks offers a creative strategy to recapture missing temporal dimensions that are latent in architectural work. Indeed, this approach has the potential to challenge traditional ideas and entrenched notions by proposing new configurations and demonstrating how multiple points of view can be considered. The resulting recombinant objects open completely new areas of aesthetic research.

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5 "anachronism, a montage of different temporalities" (Didi-Huberman, 2003, p. 81).

References

Allen, S. (1989). Piranesi's "Campo Marzio": An Experimental Design. *Assemblage*, *10*, 70–109. https://doi.org/10.2307/3171144

Augustine. (397 C.E.). *Confessions*. https://sourcebooks.fordham.edu/basis/confessions-bod.asp

Avanessian, A., & Malik, S. (2016). The speculative time complex. In A. Avanessian & S. Malik (Eds.), *The time complex: Post-contemporary* (pp. 5–56).

Bakhtin, M. (1981). Forms of time and of the chronotope in the novel: Notes toward a historical poetics. In M. Holquist (Ed.), *The dialogic imagination: Four essays by M. M. Bakhtin* (pp. 84–258). University of Texas Press.

Boyer, M. C. (1994). *The city of collective memory: Its historical imagery and architectural entertainments*. MIT Press.

Carpo, M. (2018). Big data and the end of history. *International Journal for Digital Art History*, *3*, 20–35. https://doi.org/10.11588/DAH.2018.3.49913

Didi-Huberman, G. (2003). Before the image, before time: The sovereignty of anachronism. In C. Farago & R. Zwijnenberg (Eds.), *Compelling visuality: The work of art in and out of history* (pp. 31–44). University of Minnesota Press.

Dixon, S. M. (2005). Illustrating ancient Rome, or the ichnographia as uchronia and other time warps in Piranesi's Il Campo Marzio. In S. Smiles & S. Moser (Eds.), *New interventions in art history. Envisioning the past: Archaeology and the image* (pp. 115–132). Blackwell.

Eisenman, P. (2000). The wicked critic. *ANY: Architecture New York*, *25/26*, 66–70.

Eisenman, P., & Iturbe, E. (2020). *Lateness*. Princeton University Press.

Ernst, W. (2016). *Chronopoetics: The temporal being and operativity of technological media* (Focused English). Rowman & Littlefield International.

Fenstermaker, W. (2019, February 4). *How artificial intelligence sees art history*. The Metropolitan Museum of Art (The Met). https://www.metmuseum.org/perspectives/articles/2019/2/artificial-intelligence-machine-learning-art-authorship

Gen Studio. (2019). *Generist Maps*. https://gen.studio/

Giedion, S. (1941). *Space, time and architecture: The growth of a new tradition*. Harvard University Press.

Groys, B. (2009). Comrades of time. *E-Flux Journal*, *11*. https://www.e-flux.com/journal/11/61345/comrades-of-time/

Hartog, F. (2015). *Regimes of historicity: Presentism and experiences of time. European perspectives: A series in social thought and cultural criticism*. Columbia University Press.

Harvey, D. (1990). *The condition of postmodernity: An enquiry into the origins of cultural change*. Blackwell.

Irvine, R. D. G. (2020). *An anthropology of deep time: Geological temporality and social life. New departures in anthropology*. Cambridge University Press. https://doi.org/10.1017/9781108867450

Kubler, G. (1962). *The shape of time: Remarks on the history of things*. Yale University Press.

Kwinter, S. (2001). *Architectures of time: Toward a theory of the event in Modernist culture*. MIT Press.

Lambert-Beatty, C. (2009). Make-believe: Parafiction and plausibility. *October*, *129*, 51–84. https://doi.org/10.1162/octo.2009.129.1.51

Mayrhofer-Hufnagl, I. (2022). *Architecture, futurability and the untimely: On the unpredictability of the past*. Transcript Publishing.

Nagel, A., & Wood, C. S. (2010). *Anachronic renaissance*. Zone Books. https://doi.org/10.2307/j.ctv1453n0p

Nietzsche, F. (2021). Nachgelassene Fragmente 1869–1874. In G. Colli & M. Montinari (Eds.), *Sämtliche Werke: Kritische Studienausgabe 7*. De Gruyter.

Prigogine, I. (1977, December 8). *Time, structure, and fluctuations*. Nobel lecture in Chemistry. https://www.nobelprize.org/prizes/chemistry/1977/prigogine/lecture/

Rancière, J. (2015). The concept of anachronism and the historian's truth. *InPrint*, *3*(1), 20–52. https://doi.org/10.21427/D7VM6F

Ross, C. (2012). *The past is the present; It's the future too: The temporal turn in contemporary art*. Bloomsbury.

Scully, V. J. (1974). *Modern architecture: The architecture of democracy. The great ages of world architecture*. Braziller.

Stierli, M. (2019). *Montage and the metropolis: Architecture, modernity, and the representation of space*. Yale University Press.

Tafuri, M. (1987). *The sphere and the labyrinth: Avant-gardes and architecture from Piranesi to the 1970s* (P. d'Acierno & R. Connolly, Trans.). MIT Press.

Trachtenberg, M. (2005). Building outside time in Alberti's "De re aedificatoria." *RES: Anthropology and Aesthetics*, *48*, 123–134. https://doi.org/10.1086/resv48n1ms20167681

Romano, S., & Perna, V. (2022). Revolving Around 'Temporality'. Contingency as a Means to Question the Stability of Space Through the Flowing of Time. *archiDOCT*, *18*(10 (2)).

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Revolving Around 'Temporality'. Contingency as a Means to Question the Stability of Space Through the Flowing of Time

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In our sensorial experience of reality, time stands as a primary category through which we mark the pace of our life. Besides its importance in our existence as human beings, when it comes to architecture time has always been considered a subsidiary mean that might – or more often might not – be taken into account concerning its capacity to lead and critically analyze design processes and their outcomes. No less, in the discourse on architecture, the main interest has always been oriented towards the pure spatial aspects of architecture and the idea of space, especially regarding modern thought, has never been questioned outside the realm of objective knowledge. This is also due to a bias toward the ease of recording, and tracing, architecture's spatial aspects through common traditional representation techniques. Cartographically, we determine our position on Earth whilst, phenomenologically, we understand our body concerning what surrounds it and imaginatively we place ourselves in the places that are dear to us. Temporal-based phenomena erode the understanding of architecture as a singular, stable object, sharply contrasting traditional architectural notions arising from the stability and permanence of Platonic idealism and classic philosophy and architecture can be analyzed not anymore as a singular, isolated, and autonomous realm, but throughout its engagement with everyday dynamics and the real world. This leads to the impossibility to construct a totalizing view of the world using a universally accepted system of principles towards a more complex system of heterogeneous experiences that are not grounded on a predominant central point of reference or architecture as an exception within the flowing of time. This essay, through a comparative analysis that stands on a specific intersection within architecture and art, aims to explore the possibilities disclosed by incorporating and interpolating the notion of temporality into architecture throughout the understanding of the reciprocal relationship existing between body and space and some spatialized representations/projections of it. To do so, the exploration will revolve around the word 'contingency' - a future event or circumstance which is possible but cannot be predicted with certainty – as a means to question the normative interpretation of space and, quoting Jeremy Till (2009) "*contingency situates us in the real world, providing opportunities for transformative change while avoiding the siren calls of ideals*" and question the positivist emphasis on certainty and objective truth when looking at space and its physical reifications.

1. Introduction

Throughout the history of architectural criticism, there have been several ways to define how a building could establish meaningful relationships within its larger spatial/cultural context and, thus, define a scale of values through which that work can be analyzed/appraised. The majority of them imply an understanding of the formal aspect of a specific piece of architecture that takes into account specific and contextual cultural elements; whether we refer to a broader framework rooted in the use of narrative, allegory, figures of speech - ex. the metaphor -, the whole investigation revolves around the aesthetical values of that architecture and how those can transfer a functional program to its design. More interdisciplinary analyzes of this question orbit around the importance of considering signification and representation (Peirce, 1985) and are influenced by the fields of semiology and elements such as signs, syntax, and iconography in architecture.

Nevertheless, despite the interest that might arise around these specific methods of inquiry in the architectural debate, all of them are grounded in a bias that the spatial discourse regarding architecture intends architecture as-object leaving less importance to the experiential moment generated by its existence and impoverishing the intimate relationship that occurs among time, space and the body of a subject.

Although its indisputable importance in our existence as human beings and its being a primary category through which we mark our presence in the flow of history, when it comes to architecture Time has always been considered a subsidiary means that might – or more often might not – be taken into account concerning its capacity to lead and critically analyze design processes and their outcomes (Judson, 2011). If in the discourse around architecture too much emphasis has been placed on its purely spatial aspects, this is due also to our modernist notion of space as part of a physical/measurable, thus, objective knowledge, and the ease of its representation through established and traditional techniques. Such a narrow perspective on the development of an exhaustive discourse on architecture was already highlighted by Sigfried Gideon. In its *Space, Time and Architecture*, he affirms: *Exhaustive description of an area from one point of reference is, accordingly, impossible*; [...] *In order to grasp the true nature of space the observer must project himself through it*. (Giedion, 1941), underlining that even though space and time exist as well-defined reference points and categories in language and common thought, rarely they are present together when at stake there is the interpretation of our lived experience with the second one somehow subservient to the simpler and more obvious spatial referents of human existence. The aim of this paper is to disclose the possibilities disclosed from by incorporating and interpolating the notion of temporality into architecture throughout the understanding of the reciprocal relationship existing between body and space and some spatialized representations/projections of it. Using art – and the work of art – as a critical lens through which it is possible to explore differently the relationship between time, architecture, and space, the main goal is to demonstrate how architecture can be intended furtherly not as an 'isolated event' but as a part of a temporal *continuum* able to activate multiple and overlapping temporalities in our present. To do so, the methodology used grasps in a comparative study between different works of art and architecture, and the common relationships they create in the public space they are inserted in, in order to highlight the interdependency among the two fields under the concept of time and temporality.

2. Which Time? Some clarifications on the authors' positioning

What is the time? "*If no one asks me, I know, if I want to explain it to anyone who asks me, I don't know anymore*" (Sant'Agostino, 2006).

Following this famous quote from the theologian and philosopher Sant'Agostino, it seems that giving an unambiguous and satisfactory definition of time is complicated, and over the centuries, it has been a matter of reflection and study by all philosophers, thinkers and scientists. Aristotle tries to provide an explanation linking time to space by sensing its descriptive properties of the movement of objects in space:

> "*Time is the number of the movement according to the before and after*". (Taroni, 2012)

In the notion of movement, the before and then indicate any type of progression and are distinguished by numbers. This leads us to think that in our perception of reality, time could be visualized through movement; objects through their movement from one point in space to another, thus changing their geometrical position, contribute to the idea of the flowing of time. Indeed, according to Aristotle, time is therefore the expression of a movement and is inextricably linked to the concept of space. During the eighteenth century, Immanuel Kant defines time and space as two *a priori* categories without which there can be no perception of reality

> "*Time is not an empirical concept, derived from an experience: since simultaneity or succession would not even fall into perception, if there were not a priori, at its basis the representation of time. Only if we assume time is it possible to represent that something is at the same time (simultaneously), or at different times (successively)*". (Kant, 1985)

The consequence of this philosophical thought is the conceptual and practical impossibility of interacting with these two categories, since by definition they are placed outside our actions, *a priori*, that is, as an essential starting point for any human action. This concept carries with it the idea that time can be a perfect, abstract and incorruptible category, far from the transience and accidentally of human perception, and directly linked to the notion of infinity.

In the twentieth century, Albert Einstein and Henri Bergson developed their theories, the former in the field of science, and the latter in philosophy. Einstein, in 1916, published the *Theory of General Reality* which redesigns our idea of space and the universe, introducing a concept of relative time and space, that is, not absolute and inextricably linked to each other, because one is a consequence of the other. According to that, the concept of time presupposes that of simultaneity; that there is no such a thing as an absolute, *a priori* time that flows independently of the things in the universe. Time is always relative to the observer's reference point; there are different times relative to the moving observers who measure it.

At the same time, Henri Bergson published his theory of time as *duration*. According to the French philosopher, spatialized time serves only as a mathematical convention without any phenomenal value.

> "*When I follow with my eyes on the face of a clock the movement of the hand that corresponds to the oscillations of the pendulum, I do not measure the duration, as it might seem; Instead, I limit myself to counting simultaneities, which is very different. Outside of me, in space, there is a single position of the hand and the pendulum, as nothing remains of the past positions. Inside me, a process of organization or mutual interpenetration of the facts of conscience takes place, which constitutes the true duration*". (Bergson, 2000)

For the French philosopher, therefore, time is not a "thing" but a "progress" a continuous flow of our consciousness that continually becomes present memory, which continually re-elaborates our past experiences by up-

dating them and our actions in the present are our attitudes with respect to the future. Duration is therefore an interior space, an intimate experience of phenomenal reality; space is excluded, and becomes exteriority without succession.

> «*Bergson does not explicitly pose the problem of an ontological origin of space, it is rather a case of dividing the composite in two directions, only one of which (duration) is pure, the other (space) is the impurity that denatures it*». (Deleuze, 1991)

This division leads us to perceive time and space as two elements in some way indissolubly interconnected even if one (time) can be perceived as an internal notion and give us the consistency of the perception of the other (space) which is 'impure', that is, conditioned by the accidents of the life that takes place inside and around it. Our positioning on the idea of time and space also moves from these concepts. Time is inextricably linked to space, therefore the field of action is consequently closely linked to the "I", to the perception and narration of the human being, of human existence. And it is linked to Space to the extent that today – even following the discoveries of quantum physics – we can no longer treat these two concepts separately, scientists always refer to space-time, treating space the same way as we are treating time, as a flow. This brings us back to Aristotle's thought of time linked to space:

> "*Space and time also belong to this class of quantities. Time, past, present, and future, form a continuous whole. Space, likewise, is a continuous quantity: for the parts of a solid occupy a certain space, and these have a common boundary; it follows that the parts of space also, which are occupied by the parts of the solid, have the same common boundary as the part of the solid. Thus, not only time, but space also, it is a continuous quantity, for its parts have a common boundary*" (Aristotele, 1970)

Aristotle refers to solids and voids and the relations of forces between an object and the environment that surrounds it, but he also considers time and space as a single flow. If we keep the past, present and future conceptually separate, time as a flowing movement is unreal, because only the present, understood as a continuous flow, is real.

This leads us to consider temporality (and spatiality) as part of a single flow, which, as Bergson intended, forms *duration*, which thus creates a 'thickness' that becomes our field of action.

After disclosing the notion(s) of time followed in the construction of the essay, and from whom the applied methodology starts, some needed concepts regarding the incidence of time in architectural design and theory will be presented and discussed in the further section to understand the specific reference in a closer relationship regarding time, temporalities, and architecture

3. Some brief notes on Time and Architecture

Browsing the history of architecture to try to understand when our current object-oriented conception of architecture emerged, we will be surprised to discover how, in ancient times, there was a more intrinsic and pronounced relationship between the latter. According to Bishop (1982), there is a dormant interest in architects and planners to encode into their works temporal messages: an interest that comes from ancient times. Greek architecture was a majestic example of architecture intended as 'mnemonic devices' where highly imageable places were used to let people wander through a memory environment permeated by time transcending the here and now. Inspired by the Ellenic tradition, Roman architecture took it one step further with an accentuated passion for fluidity and the continuity of space that overcame Greek's staticity making every Roman able to actively participate in history and confirming the of time as a basic dimension of human existence embodied and enforced through the spatial characteristics of architecture. In regards to Roman architecture, the Danish author and architectural theorist Norbelg-Schulz stated that "*the Romans have effectively concretised the dimension of time*:

> *Roman articulation represents an answer to the problem of how to give space continuity and rhythm, that is, dynamic order. Space becomes the varied and dynamic, but ordered, stage where history takes place.* (Norberg-Schulz, 1975, p. 112)

Such an idea of 'mnemonic devices' has permeated for several centuries the development of urban environments. As confirmed by Lewis Mumford, despite the emergence of large and more spread cities, their architects and urban planners did their best to integrate man's sense of past, present and future (Friedmann, 1962). In his writing, he affirms that the sense of the city as a tool for memory conservation and storage is one of its most important and peculiar and invaluable functions.

However, the development of modern philosophy based on a rationalistic conception of knowledge inspired by the precision and certainty of the mathematical sciences in every aspect of knowledge completely oriented this discussion towards other principles. In *The Production of Space*, Henri Lefebvre and Donald Nicholson-Smith pointed out how René Descartes became a fundamental reference point for the common understanding of space and that "*with the advent of Cartesian logic… space had entered the realm of the absolute. As Object opposed to Subject, as res extensa opposed to, and present to, res cogitans, space came to dominate, by containing them, all senses and all bodies*". What is fundamental to understand is that Descartes' idea of space refers only to its measurable extension in these three dimensions. Indeed, he argues that length, breadth and thickness, are the essence of corporeal substance, and thus, space, it is clear the latter becomes a mere physical property of matter: an abstract concept that can be measured, divided, shaped, and moved (Till, 2009, p. 120) and serves to us just to consider the amount of space that an object occupies and - or the distance between a series of them - most probably does not correspond to our experiential comprehension of it.

This abstract space stands as something external which can be experienced from a passive distance precisely because it is external to the subject and represents an oppressive act (Till, 2009, p. 123) since it is rooted in all

those characteristics of architecture where time is absent and that is easy to commodify and control from the power. If space undergoes this fate, time too, so linked to it in antiquity, undergoes its linearization and progressive simplification. Time is then expelled from the architectural object and the experiential moment of the subject itself, causing a *predominance of the visualization* and impoverishment of the urban environment which is considered only throughout its characteristic of conveying visual meaning.

Even if Modern Architecture, and much of our contemporary architecture resulting from that, has inherited some of its founding principles precisely in this strongly aestheticized vision of space and architectural form throughout the annihilation of a temporal component, what we argue for it's the comeback of a sensibility where architecture can be analyzed not anymore as a singular, isolated, and autonomous realm, but throughout its engagement with everyday dynamics and the real world. Recalling the notion of space as subjective geography, we position ourselves on the idea of space as a social product in which different spatial practices where the experiential time of its inhabitants - made of coexistence and simultaneity - activates dynamics of 'spatial rewrites' that alterate commodified idea of the space as a mere problem of visualization. We aim to reintroduce the importance of the idea of time in architecture through the point of view of its main actors, passers-by in urban space, and focus our attention on heterogeneous experiences that are not grounded on a predominant central point of reference or architecture as an exception within the flowing of time.

Among the different social practices (politics, activism, performance, etc.) that can be used for this objective, we decided to focus on the realm of art and see how, through its insertion close to the architecture, it could participate in this deeper understanding of the inner structuring of space itself, especially if we intend time as a succession of states. In order to do that, the exploration will revolve around the word 'contingency' - a future event or circumstance which is possible but cannot be predicted with certainty – as a means to question the normative interpretation of space.

4. Contingency in architecture/time/public space as an operative category of time

Vitruvio wrote: «*Architecture depends on ordinatio, the proper relation of parts of a work taken separately and the provision of proportions for overall symmetry*». (Till, 2009)

This definition analyzes the architectural object as something that must respond only and exclusively to itself, inserting the idea of order, as a purifying factor of the architectural object. Susan Sontag reminds us how: «*Order is the oldest concern of political philosophy, and if it is plausible to compare the polis to an organism, then it is plausible to compare civil disorder with an illness*». (Sontag, 1979)

If we move this metaphor to architecture, we will see how the idea of order, rationality and self-satisfaction are the basis of the idea of architecture as a permanent element, detached from time, tending to infinity. The trend toward order, towards geometric perfection and the cleanliness of the elements, manifests itself as the extreme attempt to detach architecture from the passage of time and from the events of everyday life that flow parallel inside and outside the building.

In reality, an order can only exist as a set of rules that abstractly govern the notions of design, engineering, materials, and administration; everything modernism strives to regulate in the spasmodic search for truth, that could be found in the absoluteness of geometric form and pure colours. However, the truth derives from reason, that arises from the analysis of phenomenal reality, and it is always in the phenomenal reality that architecture has to deal with, not in pure abstraction, but the impurity of everyday life, of the unpredictable actions and reactions of the users of the building.

This apparent dichotomy hides an essential relationship, between order and chaos, which is at the basis of the existence and perception of the human world. That's why the idea of chaos, of what we cannot rationally order and control, the notion of chance, of contingency, cannot be accepted by modern architecture, because it risks making the geometric and perfect origin of the architectural project imperfect.

> «*The quest for eternity is thus both intellectually problematic and actually doomed to failure*» (Till, 2009).

It is not a question here of preferring one notion to another, order over chaos, or vice versa; rather, it is a question of understanding how indissoluble and dependent one is on the other and understanding that what we cannot control, what goes beyond the possibility of being calculated *a priori*, is not necessarily a negative element, but a possibility, as Hegel also defines it, the «*unity of actuality and possibility*» (Till, 2009). This possibility is what architecture has had to deal with, especially when the postmodern has highlighted the broken dreams of modernism, «*The history of human being, for its part, is going to remain contingent, agitated by sound and fury*» (Latour, 1993). Tracing a new idea of temporality «There are no longer – there has never been – anything but elements that elude the system, objects whose date and duration are uncertain» (Latour, 1993) through which the whole idea of perception of reality has changed. Shattering into infinite, incalculable, overlapping and interchangeable levels, creating a thick and continuous flow of time within which we move, a rhizomatic time that allows us to live a continuous present, nourished at the same time from our past and our future visions to draw upon at the same time in our now. This vision constantly questions the boundaries of our own being, of our knowledge, of our continually putting ourselves into play, making reality an uninterrupted flow of approaches and visions, an archive without predominant directions from which architecture cannot be detached, in the words of Karatani «*architecture is an event, it is always contingent*». (Karatami, 1995).

If, as we have seen, architecture is an event in itself, the category of time is the one that most characterizes it, also transforming physical space into a temporal category. «While architects may dream of their buildings coming into the world as fully-fledged durable items with en-

during value, the reality is that they *always* enter the social realm as transient objects». (Till, 2009)

We can try to understand how this being an event that takes place in the thick flow of time of which we are all part, makes it participate in all the events that take place inside and outside of it, as a whole, whose boundaries are blurred and in continuous renegotiation.

In the new concept of our reality: «Nowadays, due to the changes in our global understanding... architecture is no longer considered as the act of creating an artefact that stands alone, tangible, perceived or presented to the senses. From the constraints imposed by this new mental framework, strong, new concepts emerge». (Voyatzaki, 2016)

From this point of view, the architectural object is not only the recipient of the functions for which it was designed; it is not just part of a changing landscape in which it becomes a visual and perceptive element. The architectural object also becomes a place whose construction characteristics, its full and empty spaces, its internal paths and its façade, are keywords of a list that becomes part of a vocabulary of possible interactions with the building itself, transforming it into an open object. If we could translate some notions of sociology into architecture, we could welcome the idea that «The presence of the 'Other' prevents me from being totally myself» (Laclau & Mouffe, 1985) thus becoming witnesses of a constant displacement of identity that constantly questions the idea of architectural space (and time).

The intervention of art on the architectural object opens up the possibility that "the other" becomes visible, shifting the physical boundaries and the image of the building into a continually renegotiated *elsewhere*. Even the work of art, as well as architecture, is a product of the intellect, which takes the form of an object, but which, unlike the artisanal or industrial object, also contains another value, that of making visible the other. The work of art is, therefore, part of the real world, but its appearance, its structure serves to make the other, the symbol, visible. Over the centuries, the idea of what we consider and call a "work of art" has also changed as a result of the influence of new technological discoveries and the social battles that have influenced artistic practices and expanded the possibilities of expression for artists. Along with the possible forms of the work of art, the artists have also questioned the idea of the place where to install and exhibit the work. This has led over the centuries to a reinterpretation of the spatial relationship between work and exhibition space, leading artists to measure themselves with ever-changing spaces with which to establish increasingly interconnected and complex relationships, that overcoming of the imposed order of modernism, in a path parallel to that of architecture. The artists began to see the space in which to exhibit their works, no longer as a white and neutral place, a place that "sanctified" the artistic object by disappearing all around it, without interfering. Rather as a place that had its own "weight" in the structure and perception of the work of art; the work was no longer just *exhibited* in a space, but *installed* inside the space, becoming part of it. The idea of exhibition space is thus transformed into the notion of "*site*" a well-defined place that with its physical, temporal and formal characteristics influences and is in turn influenced by the artistic intervention, because in Foucault's words:

> «*We do not live inside a void that could be coloured with diverse shades of light, we live inside a set of relations that delineates sites which are irreducible to one another and absolutely not superimposable on one another*». (Foucault, 2006)

Again the idea that the concept of space is part of a flow, part of an event and therefore of a temporal category, and can no longer be reduced to a singularity, to a single thought that takes place according to a linear and *a priori* defined temporality. In the same way, space cannot be superimposed on the space derived from its encounter with the events that take place in and around it. What we observe is the birth of another space–an event that is born and develops in the contingency of its encounter, art and architecture in the case we are examining, in which the contingency is revealed in the epiphany, in the revelation of the essence of things. What we are claiming is that both architecture and art have gone through the attempt to remove them from the flow of time, in the unsuccessful attempt to make them infinite, but of a fictitious infinity, precisely because it is blocked in a moment that repeats itself indefinitely, remaining for this reason stuck within itself. We have seen how both are in reality an indissoluble part of the temporal flow, and that their superimposition, as a consequence of the breaking down between the rigid boundaries of the categories of architecture, and art, gives rise to a whole new relationship, which confronts us as spectators to something unexpected and that makes us an active part of this relationship, part of this space–event.

5. The space-event through the work of art and architecture. Three keywords for a time-based relationship

This third space–event, therefore, arises as a result of a physical relationship between the space–event of the architectural object and the space–event of the work of art; its interpretation depends on the type of physical relationship established between the architectural object and the work of art. Below we will illustrate three ways of understanding this physical relationship[1] that describe a list born from the vocabulary of the architect's profession, which no longer implies a singular relationship of the building with

1 For the development of further physical relationships between architecture and works of art, please refer to the PhD thesis currently in process by PhD candidate Stefano Romano, entitled: The Time of Intersection, Time dynamics in the shifting perception of the relation

its own physical characteristics, but rather an extended relationship between the building and another element (the work of art).

The first word we will investigate is *Rewrite*. In architecture, this concept is related not only to certain aspects of formal or typological correspondence, but rather in something deeper; something related to the generative principles that underlie the nature of the formal characteristics of architecture (Rogers & Molinari, 1958). Meanwhile, to analyze is significate in the construction of a third-space event, we will analyze Gordon Matta-Clark, Day's End, created inside Pier 52. The abandoned piers along the Hudson River in New York, in 1975. The building is a quay of industrial origin, no longer in use at the time of the artistic intervention (and destined to be demolished a few months later). The space was formed by a single structure, without internal divisions on the ground floor, 182 meters long and 20 meters wide with a skylight at a height of about 15 meters. A building that the artist defined as a cathedral, and the two industrial chimneys at the side of the structure somehow strengthened this visual parallelism. The artist made some cuts on the very structure of the building, according to his artistic operational methodology. Gordon Matta-Clark was a sculptor who worked directly on architecture, creating cuts on the object. We are in 1975 and the formal origin of Matta-Clark's signs is to be found in minimalism, even if this geometric shape is somehow "adapted" to the shapes of the building where the artist works. In the case of Day's End, the cut made by Matta-Clark starts from an elliptical shape to become a reference to sail, since we are located along the Hudson River. The artist realized some cuts, one on the floor under the front wall and one right on the front wall. The light that springs from the opening on the front wall looks like a sacred light, the internal space of the building now functions exactly like a nave of a cathedral from the Christian period, and the "faithful" are immediately struck by the sunlight that enters unexpectedly from the wall in front of them. Walking through the space, they reach this cut, also approaching the cut on the floor that puts them in relation with the water immediately under the building.

The viewer is immediately fascinated by the cuts of Matta-Clark, by their unexpected aesthetics, and this is precisely the fundamental point of these operations; to make the architectural space an unexpected space, which can be travelled differently from the original functions conceived by the designer, in the artist's words: «There is a kind of complexity that comes from taking an otherwise completely normal, conventional albeit anonymous situation and redefining it, retranslating it into overlapping and multiple readings of conditions past and present. Each building generates its own unique situation.» (Crow, 2003) As we said earlier, there is no superimposition of two unique spaces and times, but a rewriting of the space–event of architecture, through the physical action of art on it that redefines its internal times and spaces. This focuses attention on the contingent circumstances and the different temporal dimensions that are by now indissolubly intertwined in the new version of the building, which from a forgotten industrial place – that is, passed out of the time cycle – reenters it in the form of a spiritual building, where the encounter with architecture (and with art) is unexpected and therefore generates a new perception of the building, together with a new physical relationship with it.

The second word that we will investigate is *Juxtaposition*, a word that – in architectural terms – related to the state or position of being placed close together or side by side, so as to permit comparison or contrast (Cheesman, 1988), and that coulb be investigated in art through the analysis of Tadashi Kawamata's Nests, carried out in various places in the city of Milan, in 2022. We will examine the intervention carried out inside the *Cortile della Magnolia*, on the *Palazzo di Brera*. The Palace is a 17th-century construction, when it was conceived was supposed to house the company of Jesus (a religious institution). We are therefore in full Baroque architecture, where the plasticity of the building begins to redefine the relationship between the interior and exterior of the building itself. Today the building houses several institutions including the *Brera* art gallery, the *Braidense* National Library and the academy of fine arts. Kawamata's intervention is located in one of the internal courtyards of the building, adjacent to the Botanical Garden, a secluded place, not the main facade of the building in its baroque plasticity, but an internal courtyard that has a meditative character with its facades brick interspersed with windows. The artist's installation is formally presented as a grid of wooden planks intertwined to create the shape of a nest (ideally a bird's nest). The theme of the nest is recurrent and almost obsessive in the artist's research since 1998 and nest installations have been created in various buildings, often strongly characteristic of the cities where they were created. The figure of the nest certainly refers to the universal and archaic need to find shelter, it refers to the moment of childhood, both from the point of view of the child who feels protected in a safe place; both from the perspective of the parent who thinks and builds (ideally as an architect), a safe place for his offspring. The material chosen by the artist – wood – and the sense of precariousness given by the intertwining of the wooden planks, give a sense of the transience of the object in relation, in this case, to the solid architectural structure on which it is installed. The physical relationship between architecture and work of art, the juxtaposition, suggests the possibility that the original function of both objects continues to remain separate; the building maintains the functions and practicability of its internal spaces that it already possesses; likewise, the work of art that we can read as an object in and of itself.

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between the work of art and the architectural artefact in public space. IDAUP XXXV cycle, University of Ferrara – Polis University, Supervisor PhD Loris Rossi.

Figure 1. Gordon Matta-Clark - Day's End, 1975 © The Estate of Gordon Matta-Clark.

Courtesy The Estate of Gordon Matta-Clark and David Zwirner. New York, London, Hong Kong

Obviously, as already demonstrated above, both objects have their own space–event that must be read and analyzed separately, but their juxtaposition nevertheless gives rise to a new space–event that shifts our perception and our physical relationship with the architectural space, in this case, the empty space of the inner courtyard. Reconfiguring the architectural space of our daily life through the activation of our childhood memory and/or our parental responsibility and inserting it, together with the work of art in the temporal flow of our continuous present, it refers to a vision of fluctuating and transitory reality. Contingency is revealed in the epiphany of the encounter of this juxtaposition, where the artwork and architecture works together as activators of spaces and times different from those of the objects examined individually.

Figure 2. Tadashi Kawamata - Nest, 2022, Cortile della Magnolia, Palazzo di Brera.

Photo by Daniele Perani

The last word we will investigate is *Addition*, in the meaning of adding something – coherent or uncoherent under the topic of style and form (Carpenzano, 2015) – to an existing object. The word will be investigated through Alberto Garutti's Egg, installed inside the Unicredit Tower, in the *Piazza di Porta Nuova – Garibaldi* in Milan. The tower is part of an urban regeneration project carried out by the Pelli Clarke & Partners studio and is (to date) the tallest skyscraper in Italy (231m). The skyscraper has a sinuous shape with the convex façade entirely glazed and the concave façade modulated by the sunshades, the building ends with a spire that in some way recalls the spire of the Milan Cathedral, a spiral shape entirely covered with LED lights. The concave façade seems to structurally welcome the square in front (Piaza Gae Aulenti) in which the work of Alberto Garutti also stands. The work is installed in the space of the square, literally climbing through the four floors that reach the ground floor from the garages, opening into the square. The work is added to the complex in different levels of interpretation, structurally, perceptually, and emotionally.

From the point of view of the structure, the work consists of 23 chromed brass metal tubes that develop verti-

Figure 3. Alberto Garutti - Egg, 2012 - picture from the artists' website

cally on four levels, from the parking floors to the upper ones. The work adds to the architecture, becoming an organic part of it, intertwining the brass tubes with the glass parapet that overlooks the oval voids of the ventilation shaft of the four floors along which it develops. Perceptually, Garutti's work adds sinuosity and organicity to the geometry of the architecture, like a living organism that is added to the space of the architectural object. The first two levels of interpretation intersect with the emotional level, the one in our view more complex and true contingent element of the new space–an event created by the encounter between architecture and art. The 23 chromed brass metal pipes connect the various underground floors of the building, not only through their physicality and their vertical development but also – and above all – through sound. They act as audio propagation tubes between the various floors, relating spaces and architectural paths that have no visual relationship between them. In fact, on each floor, on the glass parapet, the tube opens like housing for the ear, the passer-by will be able to approach the ear and hear the sounds coming from the other floors of the building connected by the tube from which he is listening, without knowing to which plane precisely they refer.

> «*My work for the Porta Nuova Garibaldi project takes shape precisely in the parallel attempt to enter into a relationship on the one hand with the architecture itself, and on the other with the people who will use that space: citizens, passers-by, casual or daily visitors*». (Garutti, 2012)

The work thus becomes a sort of sound map of the building's events, absolutely contingent and impossible to rearrange. Like a venous system that carries life inside architecture, in all its randomness and emotionality. The work also opens up a new physical approach to the building's spaces, reverberating our private conversations in a single large flow of speeches, which is what a dense sharing space like the city is, after all. A flow of speeches that foresee or follow actions, a space for action, therefore, highly dense and multi-layered, and highly contingent.

6. Conclusion and further discussion

The analysis of these 3 case studies takes us perceptually and physically into this new dimension of the temporality of architecture where could be found some evidences of a possible connection between different disciplines moving from similar and related concepts. A dimension that has to do with a new relationship that the architectural object establishes, first of all with itself and then with other elements with which it enters into a relationship. As clarified from Lefebvre: «The "imaginary." This word becomes (or better: becomes again) magical. It fills the empty spaces of thought, much like the "unconscious" and "culture." ...After all, since two terms are not sufficient, it becomes necessary to introduce a third term... The third term is the other, with all that this term implies (alterity, the relation

Figure 4. Alberto Garutti - Egg, 2012 - picture from the artists' website

between the present/ absent other, alteration-alienation)». (Lefebvre, 1980)

In this specific case, we talked about the relationship between architecture and a work of art. The work of art in the category so-called "art in public space" arises from public art but is a wider category, which differs from the first, for a more complex relationship with the public space and with the architectural object. A relationship that calls into question the very notion of perception of both art and architecture. There is no longer only a spatial relationship of a formal balance between architecture, the space of the city and the work of art, as it could have been understood until the last century, through the works of modern art installed in the spaces of the city. Now the relationship necessarily becomes a relationship of physical and conceptual interdependence, transforming itself into a space–event, which as we have previously emphasized is built around the type of physical relationship established between the architectural object and the work of art to extend to our temporal perception of this new object–relationship.

The 3 keywords used in this paper to describe this physical relationship between a work of art and an architectural object, are not, as mentioned above, the only possible ones, they are some of the many types of physical relationships that can be established between art and architecture. Relationships that outline a parallel list of keywords, which no longer refer only to the architectural vocabulary, but delineate and refer to a shared space where can exist an inner relationship between different time-framed event that can concur to the definition of a new event. Namely, a space–event that puts in an indissoluble relationship (even if not superimposable as explained above), architecture with what is around it, snatching the architectural object from the idea of being an object detached from the surrounding events, that tends to repeat itself over and over again.

In conclusion, the research that moved this essay focused on reaffirming that architecture is an event, a place that is not a simple endless repetition of a static singularity, but a complex set of contingent events of a different nature, which intersect in multiple planes and multiple spatial relationships, creating a temporal *continuum*. A continuum that makes us perceive the architectural object as a means to activate different temporalities that overlap in our "thick present" (Till, 2009). It is in its being in the relationship that the time of architecture is not a presumption of repetition of its static nature. In the hyper-connected and virtual world, where the concept of meta-reality has become predominant and which provides a space based on the interoperability between different worlds and platforms, the real world cannot think of being based on fields that are sufficient in themselves to affirm their essence. This vision would make reality a too small place, destined to disappear as Baudrillard hypothesized: «Were it not for appearances, the world would be a perfect crime, that is, a crime without a criminal, without a victim and a motive. And the truth would forever have withdrawn from it and its secret would never be revealed, for want of any clues [traces] being left behind». (Baudrillard, 1996) Therefore, only in a profound connection with the other elements that surround it, architecture (and by extension of method, all the elements of our reality) will have the possibility of creating a temporality that is valid for the contemporary world. A temporality that it contains within itself different spaces and different times capable of generating a new space–time, which has a thickness that goes beyond a singularity destined to disappear in an instant.

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References

Aristotele. (1970). *Le Categorie* (Organon ed., Vol. 1). Laterza.

Baudrillard, J. (1996). *The Perfect Crime* (C. Turner, Trans.). Verso.

Bergson, H. (2000). *Saggio sui dati immediati della coscienza: Vol. Opere 1889-1896*. Cortina.

Bishop, R. (1982). *The perception and importance of time in architecture*. University of Surrey (United Kingdom).

Carpenzano, O. (2015). *Idea immagine architettura: Tecniche d'invenzione architettonica e composizione*. Gangemi Editore spa.

Cheesman, T. A. (1988). *Dynamics of juxtaposition in architecture*.

Crow, T. (2003). *Gordon Matta-Clark* (C. Diserens, Ed.). Phaidon.

Deleuze, G. (1991). *Bergsonism*. Zone Books.

Foucault, M. (2006). *Utopie, eterotopie*. Cronopio.

Friedmann, J. (1962). The city in history. *Town Planning Review*, *33*(1), 73–80. https://doi.org/10.3828/tpr.33.1.c111n88678q58h54

Garutti, A. (2012, November 19). *Alberto Garutti: Egg*. https://www.domusweb.it/it/notizie/2012/11/19/alberto-garutti-egg.html

Giedion, S. (1941). *Space, time and architecture: The growth of a new tradition*. Harvard University Press.

Judson, D. R. (2011). *Beyond space?: Exploring the temporality of architecture* [Doctoral dissertation, Carleton University].

Kant, I. (1985). *Critica della ragion pura: Vol. Libro I, sezione II, paragrafo 4*. Laterza.

Karatami, K. (1995). *Architecture as Metaphor: Language, Number, Money*. The MIT Press.

Laclau, E., & Mouffe, C. (1985). *Hegemony and Socialist Strategy: Toward a Radical Democratic Politics* (W. Moore & P. Cammack, Trans.). Verso.

Latour, B. (1993). *We Have Never Been Modern*. Harvester Wheatsheaf.

Lefebvre, H. (1980). *La presence et l'absence*. Casterman.

Norberg-Schulz, C. (1975). *Meaning in western architecture*. Praeger Publishers.

Peirce, C. S. (1985). Logic as semiotic: The theory of signs. *Semiotics: An Introductory Anthology*, *344*, 4.

Rogers, E. N., & Molinari, L. (1958). *Esperienza dell'architettura* (Vol. 240). G. Einaudi.

Sant'Agostino. (2006). *Confessioni*. Rizzoli.

Sontag, S. (1979). *Illness as Metaphor*. Penguin.

Taroni, P. (2012). *Filosofie del tempo - Il concetto di tempo nella storia del pensiero occidentale*. Mimesis Edizioni.

Till, J. (2009). *Architecture Depends*. The MIT Press.

Voyatzaki, M. (2016). The solid and the liquid in. *ArchiDoct*, *3*(2), 1116.

ArchiDOCT 18, 10 (2) TEMPORALITIES

That What Persists and That What Perishes: The Valencian *Barraca* in the Cultural Landscape and the Collective Imaginary

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The territory we occupy is a dynamic reality that is influenced by the actions of human beings throughout the generations. This is also the case of the study environment of the present work, the Horta and the Marjal of València, a territory characterized by the presence of two productive landscapes that have ended up shaping the cultural landscape of this area. The vernacular architecture of the place, the '*barraca*', reflects the ways of life, the trades, and the way of understanding and exploiting a territory by the civilizations that have settled in it, and, therefore, it is one of the main representative elements of the landscape itself. This paper aims to articulate a reflection on the persistent and the outdated: what persists in the cultural landscape, in memory and the collective imaginary, in the face of what perishes, the traditional vernacular architecture that is the result of the forms of life that generate it and whose representation remains unchanged despite the changes produced in the physical environment.

1. Introduction

The Merriam-Webster Dictionary, defines *landscape* as "a portion of territory that can be viewed at one time from one place" and *culture* as "the customary beliefs, social forms, and material traits of a racial, religious, or social group". In this way, the *cultural* adjective gives the landscape a human component. That is, the cultural landscape would be the one that has shaped human beings over time.

Since the nineteenth century, agrarian landscapes have been a source of scientific study from geography, but also from art because they have been an origin of inspiration for many artists (Besó Ros, 2004, p. 77). In this sense, it should be noted that vernacular architecture has always been perceived as an immutable object over time, and, therefore, given its timeless character, the perception of it has been mainly defined by the spirit of the era and the artistic or architectural values of the moment (Vicario, 2015, p. 93).

Thus, artistic works from different disciplines have helped to shape cultural landscapes that have been part of the collective imagination of generations. The enhancement of productive landscapes from different points of view has led to the creation of a global awareness about the patrimonial value of these landscapes as a product of continuous human interaction on a certain physical space. Its preservation has become a priority for a good part of society, crystallizing in numerous associations in defense of the territory.

In the study environment of the present work, characterized by the coexistence of two clearly differentiated productive landscapes such as the *Horta*[1] and the *Marjal,*[2] the appearance of a type of housing present in different points of the east coast of the Iberian Peninsula is particularly relevant: the *barraca*. The morphological characteristics of this *barraca* and their predominance over centuries, have ended up representing in an iconographic way the constant

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1 It is not easy to find a word to translate "Horta" into English. The term "Orchard" could be quite adjusted, however, the symbolic load of the term in Catalan is relegated in the translation. The term "Horta" not only describes an agricultural landscape but is also its toponym, for this reason, in addition to the above, it has been decided to keep the name in the language of the study environment.

2 The "Marjal", or Marsh, is the name given to the surroundings of the Albufera lake, characterized by rice plantations, ditches and specific constructions linked to cultivation and irrigation.

presence of human beings in this territory. However, the process of globalization initiated in the twentieth century, in addition to the Industrial Revolution and specific conditions of the environment of the city of València, have led to the virtual disappearance of this constructive typology, its presence already being scarce in the environment. To this circumstance could be added the fact that the rural architectural heritage continues to be less valued than the urban heritage (Cabrera Fausto et al., 2020, p. 79).

This disappearance in the physical environment, however, has not been reflected at the same level in the cultural landscape and the collective imagination of Valencian society, consequently, this paper aims to analyze the influence of the physical environment in the collective imagination in order to discern that which, over time, ends up perishing or disappearing, from that which, despite the changes, persists in society in an intangible way.

This reflection will start from the presence of the *barraca* as an iconographic representation of the life forms linked to the territory to analyze how their disappearance has affected the perception of the cultural landscape and whether there is a gap between the physical change of the landscape and the acceptance of this change in the collective imagination of a specific cultural landscape.

1.1. The *Horta* and the *Marjal*

The study area of the present work belongs to the eastern coast of the Iberian Peninsula and the western Mediterranean. Specifically, this area is located in the southernmost foothills of the Sierra Ibérica, near the junction with the Bético territory that is more evident a few kilometers inland. In the geological evolution of the study area, "*the strong general subsidence of the area is fundamental, favored by the intense fracturing of the Iberian space*" (Pastor, 2003, p. 205). This explains the presence of mountains and valleys or marshlands.

Within the Comunitat Valenciana, the study environment is in a privileged situation given its central position that provides good North-South communication (Jiménez Jiménez et al., 2002, p. 26). In particular, the Albufera, as a distinctive geographical element, constitutes a kind of lagoon connected to the sea by two small canals, about 15 kilometers south of the city of València. Its name refers not only to the lake itself, but also to the lowlands around it that will also be the subject of analysis in the present work. Due to its regional characteristics, it belongs to the area of the *Ribera baixa del Xúquer* whose estuary occupies the southern part of the València valley (Thede & Guarner, 2011, p. 80).

Although the whole area of the Central Plain of València is formed geomorphologically by a sedimentary grassland, this in turn is subdivided into two important areas whose crops clearly mark a division. On the one hand, we find the *Horta* area and on the other hand the *Marjal* area. These are therefore the two landscapes on which the following study focuses.

According to Professors Carmona and Ruiz, the geomorphic features of the lower Valencian coastal plains are similar to those of the rest of the western Mediterranean coast.

Figure 1. Situation image. Marked borders.

https://parquesnaturales.gva.es/es/web/pn-l-albufera/presentacion-3811

These are characterized by the grouping of floodplains and lagoons that are independent of the sea through sand barriers (Carmona & Ruiz, 2014, p. 96). Between the Mediterranean Sea and the mountainous formations of the west, the coastal plain of València stretches out. This has been shaped by the accumulation of sediments produced by the erosion of the relief over the last million years, it functions as a basin of detrital accumulation with masses of gravel and mud (Jiménez Jiménez et al., 2002, p. 33).

From an agrarian point of view, these conditions constitute the fundamental basis of the Peninsular economy, which, added to the thermal character of the climate that presents low oscillations throughout the year, allows a great diversity of crops with high productivity (Jiménez Jiménez et al., 2002, p. 80).

Throughout history, the different civilizations that have settled in the study environment, have been able to take advantage of favourable conditions such as the climate, the flat topography, the easily obtained water resources or the fertility of the alluvial soils of the central plain of València for cultivation and, in fact, they constitute the most significant plant element of the territory in which they have been replacing the natural vegetation of the area, characterizing an environment in which, as has been seen, the garden cultivation area is combined with the marshland, in which the cultivation of rice predominates.

1.2. The Valencian *barraca*

In this described environment a simple structure naturally arises, a product of the means and resources available in the place that Michavila, who wrote the first treatise on the Valencian *barraca*, details as follows:

> *"The farmer is left with stone that is rather distant and difficult to carry, he counts on scarce wood, although nei-*

Figure 2. Aerial image of the territory where the different natural and agrarian landscapes are view.

https://www.acequiarj.es/aporte-de-agua-a-lalbufera/

> *ther one nor the other are essential to build a comfortable house given the benignity of the climate (...); but instead he relies on very clay-like soil with which less skilled hands can give durable shape to some walls; at hand he has abundant reeds that grow on the margins of the canals, in which also grow enough poplars to build the frame, the skeleton, of the house, and no less far can be found straw, cattail or brushwood with long resistant stems."* (Michavila, 1918, p. 33)

With these materials, the inhabitants of this place, converted into builders of their own homes, develop a simple typology, which is repeated not only along the east coast of the Iberian Peninsula, but also in other places of the world with similar environments and resources. In this case, there is a scarcity of materials that could be interpreted as a problem for the inhabitants, however, in vernacular architecture the scarcity is understood as a socio-material condition, influenced by the relationship between available resources and human needs and desires (Till et al., 2013, cuoted in Ascher, 2013, p. 25). Thus, the scarcity of resources contributes to awakening collective intelligence, which represents one of the values of traditional vernacular architecture.

The architect Miguel del Rey, in his work "*Arquitectura rural valenciana. Tipos de casas y su análisis de su arquitectura* " (1998), describes the *barraca* as a construction of a parallelepiped floor with a rectangular proportion built with lateral walls of adobe blocks on which a plant-based cover is raised with a very steep slope, forming a dihedral angle with a very oblique ridge (Del Rey, 1998, p. 151).

It is exactly this inclined roof that offers the *barracas* a unique image, which emerges from an eminently horizontal landscape and which, after a strong process of idealization has become the symbol of the house in the Valencian landscape.

Throughout the last century, beyond the studies mentioned above, many other works have also been developed in relation to the *barracas* in the study area, as well as other similar ones throughout the Iberian Peninsula. In this sense, it is worth mentioning the work carried out by Victor Gosálvez, which focuses on the constructive aspects and the disappearance of the type (1915/1998), as well as the work carried out by Max Thede (Thede & Guarner, 2011), which constitutes one of the most detailed works about the Albufera of València and its architecture.

Later on, other works appear such as the developed by Escrivà (1976), García Moya (2015), Lavid Saiz (2017), as well as many others of similar *barracas* along the east coast of the Peninsula, such as the study on the Ebro *barraca* developed by Queralt (1992) or from Murcia, such as the one developed by Soldevila Iniesta (2001). These works are extended in the 21st century with works related to the *barracas* such as that of Campos and Moncusí (2013) among many others.

2. The cultural landscape of the Horta and the Marjal of València

Although the previously used description of cultural landscape implies a modern vision of this concept, the landscape of the *Horta* of València and the *Marjal* of the Albufera have been part of the public image of the city of València since much earlier (Díez & Sanchis, 2015, p. 65). In this sense, and specifically with regard to the landscape of the *Horta*, Andalusian literature and later writers such as Francesc d'Eiximenis, Lluis Vives, Pere Antoni Peuter or

Figure 3. Historical photography of two *barracas*.

https://valenciablancoynegro.blogspot.com/

Gaspar Escolano already reflected in their work the importance of the large garden adjacent to the Mediterranean city of València (Díez & Sanchis, 2015, p. 65).

In the territory in which this work is focused, as previously mentioned, there exists a duality of a landscape that frequently combines both the *Horta* and the M*arjal* of the Albufera. In fact, there are many populations in this environment in which this duality is presented, as is the case of Catarroja, Silla, Sueca, or the city of València itself. It is therefore a diverse environment, in which the boundary between landscapes is blurred and changes over the centuries taking advantage of the economic advantages of the moment.

These two landscapes, however, share many of the elements that characterize them, and in this sense, Professors Marcenac, Bosch Roig, Bosch Reig and Ballester, in the article "*Paisaje rural y paisaje urbano, su encuentro a través de las alquerías*" (2010) create a description in relation to the landscape of the *Horta* that may well also serve for the *Marjal*:

> *"This landscape is characterized by the vibrant and fragmented horizontal plane generated by the crops (color, texture, shape, ...), with small scattered buildings that act as a counterpoint in said landscape, and that acquire greater importance by being accompanied by mainly vertical (...) The woodland is also located on the edge of some ditches or roads, thus reinforcing the territorial structure (...)."* (Marcenac et al., 2010, p. 394).

These small, scattered buildings to which the authors refer are farmhouses, irrigation engines and *barracas*, a typology that appears in both landscapes and therefore serves as a link between them. As will be seen below, it should be understood that, although the *barraca* does not represent a keynote in the two landscapes at this time, it did become the predominant typology of the environment during the centuries in which the image was built on the cultural landscape of the *Horta* and the *Marjal*.

Thus, since this work focuses on the *barracas*, it is necessary to focus the analysis of the cultural landscape on these elements, that is, around the constructive fact. The architecture of a rural environment like the one this work occupies, as defined by Professor Besó Ros, is the result of the interrelation of three factors: the physical space, the agrarian landscape and the human community, and it is therefore necessary to analyze its impact on heritage from an interdisciplinary vision that encompasses architecture, but also geography and anthropology (Besó Ros, 2004, p. 78).

As for the relationship between architecture and the physical environment, it is worth highlighting the importance of the physical environment in relation to vernacular construction, since it is this medium that determines the materials used in the construction of the place, on the basis of a pre-industrial premise based on self-consumption. In addition to this material link with the physical environment, there is also the influence that climate conditions exert on architecture, which not only determine the constructive and formal aspects of buildings, but also, for example, the dispersion of the same or the appearance to a greater or lesser extent of shelters in the rural environment.

The relationship between architecture and the agrarian landscape is also evidenced by its relationship with the different agricultural activities and the different uses of the land. In this way, the different crops in each territory can condition the room of the house in case of needing spaces for its management, storage and transformation, as well as

the presence of more or less equipment for community use, such as warehouses, stables, etc.

Regarding the relationship between the architecture and the users who inhabit it, this becomes more relevant, if possible, in a rural environment, given that in this environment it is more often the users themselves who build their homes and with it, they are inevitably conditioned, and the future inhabitant becomes the core idea on which the home is inspired.

The vernacular architecture, and in particular the *barraca*, therefore represents a reflection of the forms of life, but also of the territory it occupies, becoming in some way an *ouroboros* which at the same time that it forms the cultural landscape, is the result of the conditions that generate it. Next, we will analyze the importance of the *barraca* in the image of the cultural landscape that still persists in Valencian society in relation to the study environment.

2.1. The *barraca* in the cultural landscape of the *Horta* and the *Marjal*

The cultural image of the study environment, both of the Albufera and of the *Horta*, began to be forged in the period of the Reinaixença (late nineteenth century), a cultural and literary movement of the Catalan-speaking territories with a clear desire to restore the importance that this language had had centuries ago in universal literature with works such as Tirant lo Blanch by Joanot Martorell (1490).

This time they were already working on a modern vision of the landscape reinforced by a wide representation in art, from literature to painting. In this sense, it was probably Teodor Llorente who put the starting point in the literary construction of this cultural image in some of his works such as *La barraca* or *Valencia*, being complemented at the same time by a pictorial image resulting from the hands of painters such as Peris Brell or Ricardo Verde (Díez & Sanchis, 2015, p. 65).

All these artists contributed to the creation of festive stereotypes, excessively chromatic, which often contrasted excessively with a reality that was more faithfully reflected by authors such as the aforementioned Blasco Ibáñez or the writer Antonio Fillol, whose naturalism contributed greatly to a more real approach to life in this environment.

The cultural image of the environment of the *Horta* and the *Marjal* is highlighted by the appearance of a series of common elements in the literary or pictorial descriptions of this landscape, especially in the last decades of the nineteenth century and the first years of the twentieth century. Undoubtedly, one of the keys in many of these representations is the intense human presence. In contrast to the image of many other European agricultural landscapes, the Valencian rural image is crowded with inhabitants. This contributes to the fact that the portrayed scenes are frequently located in the entrances of the *barracas*, or farmsteads, and only rarely can you contemplate a panoramic view of the environment.

This condition highlights, on the one hand, the importance of the human presence in the construction of this productive landscape and, on the other hand, the importance of vernacular architecture in the cultural perception of this landscape. Thus, among the different constructive typologies of the environment, in the artistic representation from the Renaixença stands out the *barraca*, as an icon of the *Horta* and the *Marjal* of the Albufera, explained in large part by its predominant presence in these years and by the constructive uniqueness in the presence of other typologies such as the farmhouses.

In this sense, it would be worth pointing out the theories of Alois Riegl on the *Kuntswollen* who relates the formal affinities within the same period in all cultural manifestations with that "will of art". That is, art is understood as a reflection of the sentimental projection or *Einfühlung* of society itself and its worldview (Cagnolati & Segovia, 2021, p. 64). This could help to understand the reason why this architectural typology is so present in certain artistic movements and in certain historical periods.

The relationship between the cultural landscape and the vernacular architecture that represents the Valencian *barraca* is therefore evident. On the one hand, the *barracas* are a reflection of the landscape itself, its resources, its people and the uses of the land, as shown by Professor Besó Ros (2004, p. 78), and on the other, their presence throughout history has unequivocally contributed to the linking of landscape and *barraca* in the collective imagination, proof of this being the different representations of this typology in literature or in paintings, thus contributing to the creation of a cultural landscape that was reinforced especially since the end of the nineteenth century.

3. That which perishes. Changes in the landscape of the environment of València

In relation to the city of València and its metropolitan area as the main population nucleus of the study environment, it is worth highlighting the transformation experienced by it during the last years of the twentieth century and the first decades of the twenty-first century. The city, and the majority of nearby towns, have considerably increased their urbanized area, based on a model of residential expansion of private development, while a multitude of projects have been launched by the public administration.

This growth model has its origins in the second half of the twentieth century, when there was a significant growth of business urbanism which addressed and speculated on the uses of space (Campos & Moncusí, 2013, p. 369), however, this model was modified at the beginning of the twenty-first century with an urban planning model that seeks the creation of competitive and global creative cities, in which large events, promotional campaigns and emblematic architectural projects become a central concept of municipal policies.

This evolution in the growth models of cities can also summarize what was experienced by the city of Valencia, and to a lesser extent, that of a multitude of populations in its metropolitan area. This growth, in the case of the capital, has been influenced by three geographical features that give València its own character: the *Horta* that surrounds the city, the ancient Turia riverbed that crosses the city and the sea as its eastern limit. In relation to the *Horta* and, to a lesser extent, given its separation, the *Marjal*, it continues

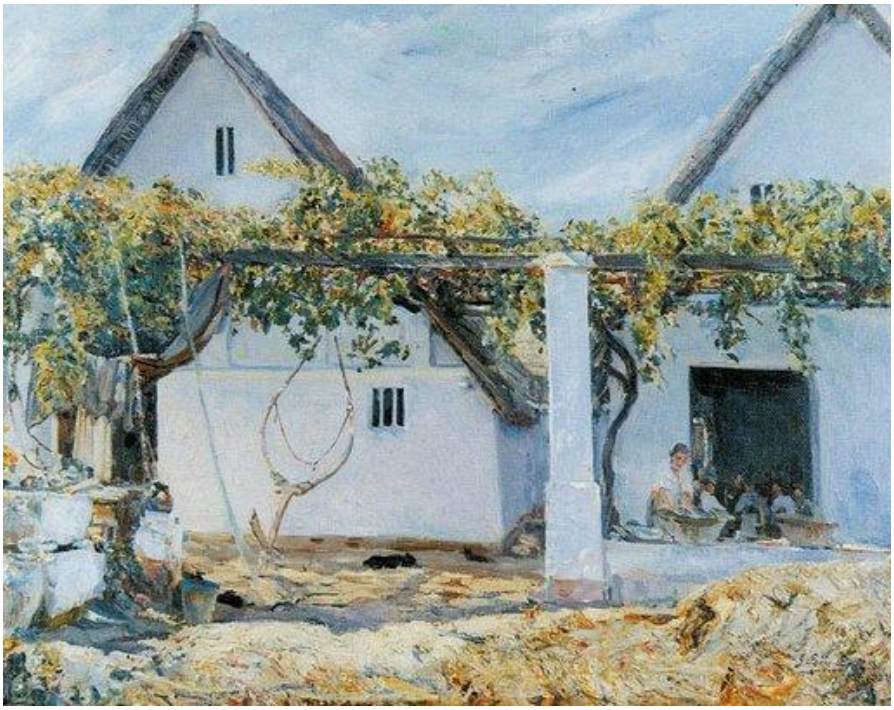

Figure 4. La barraca. ***(Peris Brell)***

https://wikioo.org/es/paintings.php?refarticle=ARD2PM&titlepainting=La+barraca&artistname=Julio+Peris+Brell

to dispute the use of land to residential areas, and thus the city has gained ground from the *Horta* for the construction of other public facilities such as the Activity Logistics Zone (ALZ) of the port, a water treatment plant, Merca Valencia or part of the Ciutat de les Arts i les Ciències (City of Arts and Sciences). These actions have not been free from controversy and over the years different neighborhood associations have been created that have ensured the protection of these productive landscapes, such as *Salvem* and its different specific movements for each area of the territory or the city (Campos & Moncusí, 2013, p. 372).

Actions such as those mentioned above, and in particular the creation of the Ciutat de les Arts i les Ciències as the maximum exponent of the urban transformation of Valencia, have helped to shape a modern city in which these buildings coexist both with historical buildings in the city center, as with the *Horta* in its peripheral part, creating a city of physical contrasts that do not cease to be a reflection of other social contrasts such as the open economic gap between the most humble neighborhoods of the city.

These urban changes that have affected the landscape of the study environment, add to other processes started in the early twentieth century and that have ended up eliminating virtually all remnants of the *barraca* in the *Horta* and the Albufera.

The improvement of the standard of living of the study regions during the first decades of the twentieth century are one of the causes that explain the replacement of this typology (Casas Torres, 1944), together with the formal limitations of the *barraca*, which made it difficult to evolve and adapt to the sociological changes of the moment. To all these circumstances is added the prohibition to build and repair the *barraca* derived from the different fires that affected population centers formed by the grouping of *barracas* during the nineteenth century (Del Rey, 1998, p. 168).

The humble origin that has been studied of these constructions, on the other hand, also contrasted with the improvement in the interiors of the *barracas* in which its inhabitants were expressing the improvement of their economic conditions (Gosálvez Gómez, 1915/1998, p. 80), also explained in part by the transfer of a large part of the labor force from the field to the industry, producing the abandonment of an architecture so intimately linked to the primary sector.

4. That which persists. The Valencian *barraca* in the collective imaginary

As we have seen, the city of Valencia and its surroundings, which largely covers the area of study of this work, have undergone fundamental changes in the image of the landscape in recent decades. The territory is a dynamic reality, and the interaction between the human being and the environment is progressively alternating the physical forms of the landscape; however, these physical changes, which in recent decades have occurred in short spaces of time, have not meant a change in a mental sense, that is, in the cultural image of the space (Díez & Sanchis, 2015, p. 64).

This idea, and its impact on the perception of the collective landscape of the *Horta*, is reflected in the article *Territorio e imagen. La percepción del paisaje de la Huerta de Valencia* (Torrijos & Ibor, 2015) written by professors Díez Torrijos and Sanchis Ibor. In it, they collect the drawings made by different groups of students between 5 and 12 years after visiting the environment of the *Horta*. At the request to represent this landscape, the students mainly em-

brace the preconceived idea of it, and so, in their drawings appear a multitude of *barracas*, although nowadays their presence is already residual, eliminating at the same time all those elements that do not correspond to the collective icon.

This experience places special importance on two key ideas to understand the importance of the *barraca* in the cultural perception of the landscape, as well as in its preservation and recovery. On the one hand, in the drawings, the presence of these structures compared to other majority structures today such as farmhouses, evidences the symbolic load of the *barraca* in the collective imaginary, its iconicity prevails compared to the lack of specimens that have survived the twentieth century. On the other hand, the persistence of this symbol in the imagination of children aged 5 to 12, who have not been influenced by memories in which the *barraca* had a greater presence in the *Horta* and the *Marjal*, reveals the idea that changes in the landscape and in the cultural perception of it are often not simultaneous, but that years must pass until this perception changes.

5. Conclusions

Throughout this paper one of the representative elements of the productive landscapes of the *Horta* and the *Marjal* de València has been analyzed in detail as well as how this element has become a constant in the mental representation of these landscapes.

Not only the history and the constant presence of the *barracas* in the territory over generations have contributed to this task, but also the presence of the same in different artistic disciplines, which have managed to shape the collective imagination, especially since the last decades of the nineteenth century. This artistic effort is, possibly, what has allowed the Valencian *barraca* to become an icon of this territory that persists despite its practical disappearance throughout the twentieth century.

In recent decades, the different institutions with power over the territory, mainly the municipalities and the autonomous government, have put in place different instruments of planning and management of the territory aimed at recovering this landscape, which was damaged especially during the second half of the twentieth century. In addition to these initiatives promoted by the public authorities, different institutions have been added such as the Universitat Politècnica de València, which has launched programs such as "*Amb les mans*", an Innovation and Educational Improvement project focused on the recovery and enhancement of the built heritage of these landscapes. To this effort has also been added the work of many researchers who are contributing to the study and preservation of the *barraca* as a representation of the ways of life of the historical inhabitants of València, as well as of the way of understanding and exploiting the territory in a more sustainable way (Rosaleny Gamón, 2021, p. 126).

Thus, we could reflect on the urgency for the recovery of the *barraca* before their disappearance ends up affecting the collective imagination regarding the landscape, not only because of the patrimonial value that this type of vernacular architecture represents, but, above all, because, as has been seen, the *barraca* itself represents and synthesizes better than any other element the landscape values of the study environment.

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References

Ascher, B. E. (2013). *Built rationally! Design approaches to housing within the limits of scarcity*.

Besó Ros, A. (2004). La construcció dels paisatges rurals valencians. Una aproximació a les principals tipologies d'arquitectures disperses. *Saitabi*, *54*, 77–102.

Cabrera Fausto, I., Fenollosa Forner, E. J., Serrano Lanzarote, A. B., & Perelló Roso, R. (2020). Les alqueries del terme de Borriana. *Anuari de l Agrupació Borrianenca de Cultura Revista de recerca humanística i científica*, *31*, 79–90.

Cagnolati, M. S. C. & Segovia. (2021). CAPÍTULO 5 Ángel Guido y el concepto moderno de la Historia del arte. In *Entre libros y retratos* (pp. 58–77).

Campos, B. S., & Moncusí, A. (2013). De huertas y barracas a galaxias faraónicas. Percepciones sociales sobre la mutación de la ciudad de Valencia. *Papers. Revista de Sociologia*, *98*(2), 365–391.

Carmona, P., & Ruiz, J. M. (2014). Procesos geomorfológicos en llanos de inundación y lagos costeros mediterráneos. El cambio ambiental histórico en la Albufera de Valencia (España). *Cuaternario y Geomorfología*, *28*(3–4), 95–106.

Casas Torres, J. M. (1944). *La vivienda y los nucleos de población rurales de la huerta de Valencia*.

Del Rey, M. (1998). *Arquitectura rural valenciana. Tipos de casa y análisis de su arquitectura*. Generalitat Valenciana, València.

Díez & Sanchis. (2015). Territorio e imagen. La percepción del paisaje de la Huerta de Valencia. *Saitabi*.

Escrivà, J. (1976). *Les nostres barraques*. Imprenta Fermar.

Garcìa Moya, R. (2015). Historias de la barraca mozárabe y fallera. *Diario de Valencia*, *1–2*.

Gosálvez Gómez, V. (1998). Estudio constructivo de la Barraca de la Vega Valenciana. In *Facs. ed. manuscrito original*. ICARO, Colegio Oficial de Arquitectos de la Comunidad Valenciana. (Original work published 1915)

Jiménez Jiménez, Á., Codoñer Santamans, Á., Fos Martín, S., & Martínez Tarazona, S. (2002). *Geografia física de l'Horta Sud*. IDECO, Institut d'Estudis Comarcals l'Horta-Sud.

Lavid Saiz, A. (2017). *La barraca Valenciana. Aspectos climáticos y construcción tradicional* [Doctoral dissertation, Universitat Politècnica de València].

Marcenac, V., Bosch Reig, I., Bosch Roig, L., & Ballester Bordes, M. (2010). Paisaje rural y paisaje urbano, su encuentro a través de las alquerías. *Arché*, *4–5*, 387–396.

Martorell, J. (1490). *Tirant lo blanc*.

Michavila, A. (1918). *La barraca valenciana*. Monografía geográfica.

Pastor, P. T. (2003). La comarca de l'Horta Sud: ecoguia d'itineraris mediambientals i culturals per al seu coneixement respectuós. *Torrens: Estudis i Investigacions de Torrent i Comarca*, *13*, 205–214.

Queralt Tomás, M. C. (1992). *Las barracas del Delta del Ebro. Un modelo de hábitat tradicional*.

Rosaleny Gamón, M. (2021). La barraca valenciana. Història i recuperació d'una arquitectura resilient. *ANUARI d'Arquitectura i Societat*, *1*, 124–144.

Soldevila Iniesta, F. (2001). La barraca murciana. Cangilón. *Revista etnográfica del museo de la huerta de Murcia*, *22*, 37–51.

Thede, M., & Guarner, M. S. (2011). *La Albufera de Valencia: estudio del habla y la cultura popular*. Denes.

Till, J., Iossifova, D., Sengupta, U., & Cheung, E. (2013). *SCIBE* [Online].

Torrijos, I. D., & Ibor, C. S. (2015). Territorio e imagen. La percepción del paisaje de la Huerta de Valencia. *Saitabi*.

Vicario, P. M. J. (2015). *Vernácula modernidad. influencia de la arquitectura vernácula mediterránea en la aparición y desarrollo de la arquitectura moderna durante el primer tercio del siglo XX* [Doctoral dissertation, Universidad Politecnica de Cartagena (Spain)].