

Exponential Space as a Fifth Urban Figure

Toward a Phenomenological Actualisation of
Françoise Choay's Quadripartition

corpo
spazio
architettura
fenomenologia
tecnologia
body
space
architecture
phenomenology
technology

Questo articolo esamina l'interazione tra corporeità umana, architettura e spazio urbano attraverso una lente fenomenologica. Integrando l'ontologia wittgensteiniana della realtà come "sistema di fatti strutturati" (1922) con i concetti spaziali kantiani mediati dalla fenomenologia husserliana, identifica il corpo come mediatore primario dell'intenzionalità spaziale, radicato tanto nella cognizione estetico-sensuale (Formaggio, 1996) quanto nella finitudine esistenziale (Casey, 1996). Il framework teorico unisce contributi architettonici fondamentali – dal "vuoto racchiuso" di Geoffrey Scott (1914) alle masse spaziali di Henri Focillon (1934) – con le recenti acquisizioni neuroscientifiche sulla cognizione incarnata (Gallese in Mallgrave, 2015). Attraverso una rilettura critica delle "quattro figure di spazi urbani" definiti da Françoise Choay negli anni '70, lo studio propone lo "Spazio Esponenziale" come quinta categoria, risposta concettuale alle tecnologie esponenziali (Kotler, 2012) e al loro effetto trasformativo sulla percezione spaziale. Il modello avanzato risponde all'ibridazione digitale-fisica nell'architettura contemporanea, richiedendo nuovi strumenti teorici per interpretare le relazioni corpo-spazio-tecnologia. La revisione fenomenologica disvela infine una mutazione ontologica: le teorie spaziali tradizionali devono confrontarsi con inedite condizioni dell'essere in ambienti urbani saturi di tecnologia. Lo spazio esponenziale rappresenta così non un semplice ampliamento del sistema di Choay, ma una riconfigurazione dell'ontologia urbana stessa attraverso schemi cognitivi incarnati.

This article investigates the interplay between human corporeality, architecture, and urban space through phenomenological analysis. Integrating Wittgenstein's ontology of reality as a "system of structured facts" (1922) with Kant's spatial concepts via Husserl's phenomenology, it establishes the body as fundamental mediator of spatial intentionality, grounded in both aesthetic-sensual cognition (Formaggio, 1996) and existential finitude (Casey, 1996). The theoretical framework synthesizes seminal architectural theories – from Geoffrey Scott's "enclosed void" (1914) to Henri Focillon's spatial masses (1934) – with contemporary neuroscience on embodied cognition (Gallese via Mallgrave, 2015). Through critical engagement with urban theorists, the study proposes transcending Françoise Choay's quadripartite urban classification (1970s) by introducing "exponential space" as fifth typological category. This conceptual advancement responds to Kotler's exponential technologies (2012) and their paradigm-shifting impact on spatial perception. The proposed model addresses contemporary architecture's transformation through digital-physical hybridization, requiring new theoretical constructs for evolving body-space-technology relationships. This phenomenological revision ultimately reveals an ontological mutation – where classical spatial theories must adapt to fundamentally new conditions of being in technologically saturated urban environments. The exponential space paradigm thus offers not merely an addition to Choay's categories, but a reconceptualization of urban ontology itself through embodied cognitive frameworks.

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Citation: Podda, R. (2025). "Exponential Space as a Fifth Urban Figure", UOU scientific journal #09, 88-99.

ISSN: 2697-1518. <https://doi.org/10.14198/UOU.2025.9.09>
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Article Received: 14/01/2025
Received in revised form: 22/02/2025
Accepted: 28/04/2025



TOWARD A PHILOSOPHY OF "BODILY INTUITIONS"

In his *Tractatus Logico-Philosophicus* (1922), Ludwig Wittgenstein maintained that reality could be described as an indivisible whole consisting of a "system of structured facts." Human artifacts participate in this reality through two fundamental elements: concrete "facts" and the "structure" that relates them. It is within the human-being/world relationship that the body, through experiences and "crises" (in Husserl's terms), develops its own subjective, corporeal, and inter-corporeal intentionality (Franzini, 1996, p. 13). The body anchors its vital essence in cognitive operations grounded in an "aesthetic-sensual" foundation, while existing in a state of finitude. In this context, the body assumes a dialogical value through which the experience of reality becomes consolidated. What Dino Formaggio (1996, pp. 13-14) defines as "the science of bodily intuitions" requires a carving out of its own conceptual space anew.

This necessitates examining the theoretical implications of widespread "exponential technologies" (Kotler & Diamandis, 2012), which demands a redefinition of the relationship between the human body and emerging totality. To frame the discourse on body-world relations through the concept of the *science of bodily intuitions* means accepting the apparent contradiction between *Science* and *Intuition*. This requires establishing a method that consciously navigates what Foucault (1966) termed the "interstices between epistemes" – those spaces of overlap, transition, or discord between different domains of knowledge in the human sciences. Such investigation entails examining states of *non-equilibrium* in the systems governing thought practices, revealing how knowledge becomes structured through both inclusions and exclusions. This unveils life's inherent complexity and its

paradigmatic transformations. Aesthetics positions itself as an instrument for reconnecting *Science* and *Delight*, serving as a means for humanizing scientific inquiry. This approach doesn't diminish science's validity but expands its theoretical scope – not through rigid definitions or categories, but by cultivating a pragmatic sensibility that explores perceptual and productive experiences of sensitivity. We might call this a general theory of sensitivity encompassing both the human body and the body of art. This methodology doesn't advocate for a confused partiality within diversity, but rather establishes horizons spanning across knowledge domains. As these domains evolve their paradigms, historical parameters, and terminologies, they strive to reach the root of things to arrive at the source of meaning, where original operations render the body a matrix of meaning, communication, and projective possibilities.

This alternative framework allows humans to test their finitude to derive the potential for *pre-categorical dialogue*. Here, the body-space relationship becomes a project of *engagement* in the broadest sense – referring to individuals' capacity to transcend abstract separations between mind and body, action and thought, thereby progressing toward authentic knowledge. Today, this perspective demands revising the concept of corporeality in light of contemporary paradigm shifts. Modern individuals now face the challenge of testing their *finitude*, creating new categories, drawing from these the potential to reshape the dialogue between body, space, and *hyper-technology*. From this standpoint, bodily intuition constitutes the capacity to anticipate and respond to stimuli in our increasingly interconnected, technology-mediated world. Technology, though frequently perceived as alienating, can in this context be understood as a "Medium" (McLuhan, 1964) – an extension of the body itself. Technological devices don't negate the body's role but rather amplify its ability to perceive and

interact with both physical and virtual spaces it *inhabits*. Thus conceived, an aesthetics understood as *science* must be specified as knowledge liberated from objectivist residues and open to qualitative understanding inseparable from subjective intentionality, the body's own project, and intercorporeality. This is a science rooted not in abstract metaphysics or *psychological residues*, but in the life-world where the meaning of our existence and cognitive operations resides – a meaning always grounded in aesthetic-sensory experiences originating in the body. To be truly scientific, this must be analytically embraced within phenomenology's tradition of methodological rigor. Within this *philosophy of the body*, the *technologically prostheticized* body undergoes a paradigm shift that expands far beyond its traditional capacities.

While artificial, this expansion enhances *perceptual-sensory* capabilities and consequently *intuitive-operational* ones, leaving the body – though transformed – anchored to its original role as a *matrix of meaning*, now charged with confronting profound ongoing transformations. As Merleau-Ponty asserted in *Phenomenology of Perception* (1945, p. 108): "The body is our general medium for having a world" – the medium through which experience constructs itself. *This body-world* connection faces challenges when technological intervention amplifies corporeal capacities, extending them toward new forms of perception and action. In this context, new possibilities emerge, particularly during what Husserl (1936, pp. 17-23) called phases of "crisis." Yet to fully comprehend these possibilities, we must move beyond mere historical documentation (while acknowledging its importance) and open ourselves to what might be termed the *intersomatic sensible*. This requires transcending individual subjectivity to embrace intersubjectivity and the dynamic relationship between space and time. As Heidegger argues in *Being and Time* (1927, pp. 172-177; 374-382), our existence is

intrinsically temporal and situated, and technology compels us to reconsider this relationship using new interpretive tools. Where philosophy intersects with science, and where cognitive psychology converges with phenomenology, the sense of time becomes intertwined with spatial and corporeal perception. The human brain integrates sensory inputs to create continuous representations of time and space (Nobre, 2006). This connection echoes Bergson's insight (1907, pp. 1-50) that time (*durée*) and space aren't separate entities but interconnected dimensions of human experience, rendered increasingly complex by technological transformations. Simultaneously, the technological amplification of corporeal capacities risks creating a *hypertrophy of augmented perception* that could overwhelm bodily intuition, creating perceptual bottlenecks. As McLuhan observes (1964, pp. 6-10), technological extensions amplify human capabilities while also imposing limitations, potentially creating imbalances between body and environment.

In this scenario, the gap between body and world risks exponential widening. This situation demands that human perception redefine itself, simultaneously questioning and reaffirming its centrality in processes of sensitive perception and action – particularly in highly technological and increasingly artificial contexts. The fundamental challenge remains preserving the body's capacity to function as a human "project" (Sartre, 1943, pp. 94-96) – an active participant in meaning construction, even within increasingly artificial networks of interaction. The observed phenomena demonstrate with particular clarity that highly anthropized environments – urban spaces specifically – constitute the primary locus for examining these transformative dynamics. Building upon Françoise Choay's seminal 1970s theoretical framework (*Espace: Figures of Urban Space in Time*) and its four established categories: 1. Contact Space; 2. Scenic Space; 3. Circulation Space; 4. Connection

Space, this study proposes the conceptual addition of a fifth category: 5. Exponential Space. This further conceptualization responds directly to spatial transformations induced by *exponential technologies* (Kotler, 2012) and their profound impact on perceptual paradigms. Phenomenological examination reveals this transformation's dual character. While corporeal finitude persists as the fundamental boundary of spatial experience – with embodied cognitive schemata continuing to mediate physical spatial interaction – the growing digital integration simultaneously introduces qualitative discontinuities that fundamentally reconfigure traditional parameters of urban habitability.

This dialectic between structural continuity and ontological innovation positions *Exponential Space* not as a simple categorical expansion, but rather as a substantive reconfiguration of urban ontology itself. The conceptual framework's epistemological significance lies in its capacity to transcend the *continuist-discontinuist* dichotomy. By proposing an integrative model that accounts for both enduring cognitive structures and emergent qualitative transformations, it addresses the *digital-physical* hybridization that characterizes Exponential Space. This demands new analytical methodologies to comprehend the complex *body-space-technology* relationships defining contemporary urban existence.

The advent of this spatial category necessitates critical reassessment of traditional interpretive paradigms, which must now engage with unprecedented existential conditions where technological saturation reconfigures spatial experience's fundamental parameters. The central theoretical challenge involves maintaining analytical sensitivity to both historical cognitive continuities and digital-induced discontinuities within a unified framework capable of addressing contemporary urban complexity in its totality.

BUILDING IS DWELLING, DWELLING IS BEING, BEING IS CARING

We need now to reconstruct a line of coherence that positions the contemporary situation within a historical and evolutionary process. This process considers the phases of a phenomenology of the body in its relationship with its purely physical and psychological components, as well as the anthropized space that contains and orients its experiences. The focus now is to understand how, why, and in what form humans "inhabit" the world. The notion of "dwelling," as Martin Heidegger presents it in his 1954 essay *Bauen Wohnen Denken* (Building, Dwelling, Thinking), contained in *Vorträge und Aufsätze* (1964) (Lectures and Essays), offers the key to this indissoluble bond. Thus, the interest is not in dwelling in itself, but in its essence as a decisive and essential trait of the human being in her – his relationship with the world.

The first clarification Heidegger (1964, pp. 96-99) offers is the following: "Dwelling, it seems to us, is achieved only through building. The latter, building, has the former, that is, dwelling, as its goal. However, not all buildings are dwellings. [...] Yet, even these types of constructions fall within the sphere of our dwelling. This sphere surpasses the realm of these constructions and, on the other hand, is not limited to dwellings." Heidegger first proposes a *cause-and-effect relationship*: "building" becomes indispensable for "dwelling." He then expands the discourse, noting that not all buildings are dwellings in themselves, but all buildings fall within the "sphere of our dwelling." Furthermore, this sphere "surpasses the realm of these constructions" themselves. What Heidegger presents is very similar to what is commonly defined as the "space of dwelling," referring not to a single building but to the anthropic ecosystem itself as the very place where life is expressed and where humans'

complex way of being in the world unfolds. Regarding this concept, and clarifying and expanding it further, Heidegger adds: "The way you are and I am, the way we humans are on the earth, is dwelling [...]. Dwelling appears in its full breadth when considering that dwelling lies in the essence of being human, understood as the mortal's sojourn on earth. But *on earth* already means *under the sky*. Both mean together *remaining before the divinities* (die Gottlichen) and imply a *belonging to the community of men*. There is an original unity in which the Four: earth and sky, the divinities and mortals, are one" (Heidegger 1964, pp. 96-99). It is in building-as-dwelling, then, that the key to humanity's way of being in the world can be traced. Through it, the relationships between the two systems can be understood. Another thinker, Leon Battista Alberti (1452), many years earlier, had identified in the connection between dwelling and building the very locus of the creation of the "human world." Françoise Choay (1986, p. 97) writes about the reasons that led Alberti to write his treatise on architecture: "De Re Aedificatoria is the result of amazement (before architectural achievements) and questioning (about their processes). Recognizing building as a fundamental activity led Alberti to ask – from which principles did it derive – and how could its elements be defined without being overwhelmed by the complexity of the problems raised by the infinite diversity of human activities." It is evident that for Alberti, the activity of building holds paradigmatic value; it, more than anything else, testifies to "the creative power of men because it best satisfies the demands of the three levels on which human activity operates: necessity, convenience, and aesthetic pleasure." Thus, in the very act of building, placed in Alberti's perspective, one can truly identify the minimal unit capable of uniting, in a single *creative/constructive* fact, elements that until then might have appeared dissociated (Podda 2018, p. 125). To proceed further with the argument, it is essential to clarify

the etymological basis of the term *to build*, which can be traced back to the Latin *aedes facere* (to make a house). *Aedes* refers to the irregular Latin plural *aedes-ium*, meaning *a house*, with the significant clarification that in the singular *aedis-is* means *temple cell* or even *beehive cell*. The word *to dwell*, also derived from Latin, comes from *habitāre* (frequentative of *habēre*, to have), which in its proper sense means *to continue to have* (Podda 2018, p. 126). This fusion of the two concepts shows how the very act of *dwelling* is composed of two determined factors, systematically fused. It unites, through the axiom of a composite body, the constructive capacities of *techné* and *poiesis* (art and production) with the ability to care for something and someone, representing the protection of the intimacy of *aith-os* (the warmth of the hearth). Heidegger (1964, pp. 98-99) helps us better understand this reciprocal concept when he writes: "It is not that we dwell because we have built, but we build and have built because we dwell, that is, because we are as we are inhabitants. [...] Dwelling, being placed in peace, means remaining in the protection within what is kindred to us, which cares for everything in its essence. The fundamental trait of dwelling is this: to care." *A philosophy of bodily intuitions* cannot be separated from the concept of dwelling, and consequently from the concept of building, as one depends on the other, indissolubly linked in a unicum that defines the way we belong to the world and the world belongs to us – the very heart of the human experience on earth. If building is our way of dwelling, and dwelling is our way of caring and being cared for, our capacity for relating to the world is indeed filtered through our creative/constructive capacities. If this is true, the primary, preparatory, and foundational act can only be *perceptive/intuitive*. The pragmatic and evident goal is to fulfill all these expectations through the skilled use of *techné* and *poiesis* (art and production) in pursuit of *aith-os* (the warmth of the hearth) in a

unity that, using L.B. Alberti's words, is able to satisfy our "necessities, convenience, and aesthetic pleasure" (Podda, 2018, p.125). This interpretation highlights the necessity of fully understanding how our body, with its perceptions, is the main actor in this action intrinsic to human nature and activity.

THINGS AND PLACES, PLACES AND SPACE, SPACE AND EXISTENTIAL SPACE

Moving further in this direction, we must now understand the type of relationship that exists between the constructed things that compose our habitable environment and what we identify as places. Consequently, we must also explore the connections between *places* and *space*. This step is essential to establish a substantive coherence between concepts that often appear disconnected or whose interdependence is not fully understood. While we cannot delve deeply into this topic here, it will suffice to introduce some essential principles that will aid in the development of subsequent reasoning. Kant's Copernican revolution in the study of space offers powerful tools to deconstruct the Cartesian and Euclidean view, paving the way for a phenomenological approach. In the Critique of Pure Reason (1787), Kant demolishes the concept of space as an objective entity: "Space does not represent any property of things in itself [...] it is nothing but the form of all the phenomena of the external senses" (Kant, 1787, A26/B42). This radical insight challenges Cartesian dualism, as *res extensa* is not an independent substance, but space emerges from the relation between subject and world: "We do not know things in themselves, but only their appearance according to our sensible forms" (Kant, 1787, Preface to the second edition). Furthermore, he overcomes Euclidean abstraction by demonstrating that geometric properties are not intrinsic qualities of reality: "Geometry synthesises a priori the properties of space as the

form of our intuition" (Kant, 1787, B40). The necessity of geometric truths thus derives from the structure of subjectivity. This perspective lays the foundations for phenomenological analysis, in which space is understood as a *schema* that organises experience (Kant, 1787, B179) and spatiality as the intentional correlate of consciousness: "Time and space are forms of sensible intuition" (Kant, 1787, A22/B36). Husserl would develop these insights in The Crisis of the European Sciences (1936), showing how lived space (*Lebenswelt*) precedes mathematical space and how corporeality (*Leib*) is the organisational centre of spatiality. Spatial intentionality, always oriented and situated, thus becomes a foundational element of experience. Merleau-Ponty would radicalise this perspective in The Phenomenology of Perception (1945), stating that perceptual space is "the place where sense is constituted" (Merleau-Ponty, 1945, p. 243) and that primary spatiality arises from *embodied being-in-the-world*. "Space is not the theatre of things, but the medium through which things arrange themselves" (Merleau-Ponty, 1945, p. 254). This path shows how the Kantian turn dissolves the myth of absolute space, lays the foundation for an analysis of lived spatial experience, and opens up the phenomenology of spatial corporeality. With Heidegger (1964, pp. 102-103), who asks: "The bridge is a thing and only this. Only? There exist along the river numerous spaces that can be occupied by something. One of these becomes, at some point, a place, and this by virtue of the bridge. Thus, the bridge does not simply sit in a preexisting place; rather, the place comes into being only because of the bridge." In this brief passage, Heidegger relates the terms we previously discussed – *building/dwelling* – and developse the third element necessary for our analysis: the concept of *space* that we address before via Kant. He begins with the bridge as a *constructed thing*. The bridge exists in a space (along the river), and the connection between the bridge and space determines the *place*, which

in itself is an expression of dwelling. Heidegger also questions the relationship between *place* and *space* and, consequently, the connection between *humans* and *space*. In addressing these questions, he distinguishes between the concept of space as extension (*extensio*), reducible algebraically to three dimensions – height, width, and depth – and space (*spatium*) in its proper sense, which represents an interval between two concrete points, measurable as a distance. This type of space is particular, as it determines *proximity* or distance between people and things. Thus, space now takes on a significance, once again rooted in corporeality, and adopts terminology that is not abstract but concrete, tied to the body and the relationship between humans and the world. Building on these premises, Christian Norberg-Schulz offers a detailed analysis of the relationship between humans and space, defining this type of space as "existential space." (1971). Existential space, Schulz (1982, p. 25) writes, is: "A relatively stable system of perceptual schemes or "images" derived from the environment. As a generalization drawn from the analogies of many phenomena, it has an objective character." Schulz arrives at this conclusion through studies conducted by Jean Piaget on the modes of learning and perception in children, particularly in The Child's Construction of Reality (London, 1955). From this, Schulz derives key references for understanding the elementary structures that govern the awareness and mastery of environmental characteristics, such as landscapes, urban environments, buildings, and physical things in general. A crucial concept here is *topology*, which, as Schulz explains: "Does not deal with distances as quantitative distances, such as lengths, angles, or areas, but is based on relationships of proximity, separation, succession, enclosure (*inside-outside*), and continuity. [...] Topological schemes are not abstract but tied to the things themselves." In clear alignment with Heidegger's earlier ideas, Schulz also argues that the value of space does not lie *in itself* but in the

relationships between the objects it contains, positioned in specific places and reciprocal relationships. Schulz (1971, p. 9) further states: "Man's interest in space has existential roots. It arises from the need to grasp vital relationships in the surrounding environment and to confer meaning and order to events and actions. The individual essentially orients themselves toward objects, adapting physiologically and technologically to physical entities, interacting with others, and grasping abstract realities or meanings transmitted by various languages for communication. [...] Most actions include a spatial dimension, as the distribution of orienting objects falls into classifications such as internal-external, far-near, separation-union, continuity-discontinuity. [...] To develop intentions, the individual must understand spatial relationships and unify them into a concept of space." It becomes evident that the issue of spatial experience, as perceived by humans in their environment, is a complex process involving numerous variables, both general and individual. This results in a space that is neither isotropic nor homogeneous (Cartesian) but rather a *space* as a sum of objects, *schemes* (Piaget, 1950, p. 8), and individual perceptions, which Schulz (1971, p. 11) describes as: "The sum of four-dimensional spatio-temporal events." The concept of *existential space* described by Schulz helps refine the dichotomy between Space versus Place and the relationship between *Space/Constructed Thing* as introduced by Heidegger. Place, in these terms, emerges as a center of space, a *subjectively centered* concentration or densification of space, defined by constructed objects/things to which individuals assign intimate and concrete value, shaped by their personal worlds. For such individuals, the *place* assumes central significance. Schulz (1971, pp. 29-30) writes: "All centers are *places of action*, sites where particular activities occur or social relationships take place, such as the homes of relatives or friends. [...] Places are goals or focal points

where individuals experience significant events in their existence, but they are also starting points for orientation and mastery of the environment. "Mastery of the environment occurs through what Françoise Choay (2003, pp. 10-11) defines as: "The *competence to build*, a competence inscribed in our genetic heritage, in the same way as another human trait, the competence to speak." As previously mentioned, it is through this *competence* that humans appropriate and care for (Heidegger) their environment. In conclusion, it is through this competence that Cartesian space acquires the value of a specific place capable of accommodating human bodies and mediating interactions between body and body, between body and earth, between history, stories, and memories, and between past, present, and future generations (Choay, 2003, p. 11).

ARCHITECTURE AS THE ART OF SHAPED SPACE

Up to this point, we have structured our discussion by considering the elements that commonly define what we call space. We started with the idea of a philosophy of the body, what we have termed the *philosophy of sensitive intuition*. We then introduced some related concepts, starting with the concept of space and moving on to the similarities and differences with the concepts of *centre* and *place*. We realised that they do not exist if they are not linked to the activity of *building*, and we understood how it is precisely through this skill that the human being finds his dimension, his status, and can thus take root in his environment. Now, if it is true that "The limit is not the point at which a thing ends, but, as the Greeks knew, that from which a thing begins, its very essence" (Heidegger, 1964, pp. 102-103), a further shift forward is necessary. If *Space* is the *raw material*, what constitutes, in *delimiting* it, the *true essence* of space is undoubtedly architecture. It is through it that the human being

expresses her / himself, practising it concretely through *constructive competence*. In saying this, we now intend to approach our general theme from the specific perspective of the architectural problem and its phenomenology, understood as the discipline of space formation. As Bruno Zevi (1960, p. 17) writes in the introduction to his text *Architettura* in Nuce: "the etymological analysis of the term architecture does not help to identify the expressive essence of this art; rather, by highlighting its semantic plurivalence, it reflects conceptual uncertainties about the figure of the architect and about the very object of architectural historiography". Within this *semantic uncertainty*, Zevi adds: "A quick terminological overview shows that in various languages the words denoting the architect's activity now emphasise the practical-technical aspect, now the artistic aspect. Thus, numerous definitions of architecture were coined, through which an attempt was made to define more precisely the very heart of the discipline", as Luigi Moretti wrote in the article *Structures and sequences of spaces*, published in the magazine *Spazio* n° 7 in 1953 (Podda, 2024, 182-191). Although Erich Brinkmann and August Schmarsow are two When tracing his genealogy, one must start with the current of thought that defined architecture as *Raumgestaltung* (space planning). Among the main protagonists, it is important to read a brief excerpt from the studies of Geoffrey Scott (1914, pp. 226-230), who wrote that "architecture gives us three-dimensional spaces in which we stand [...] our mind is by habit fixed on tangible matter, and we speak only of what stops our eye; matter is given form, space comes of itself. Space is *nothing*, a mere negation of the solid. And so, we come to neglect it. But however much we may neglect it, space acts upon us and can dominate our spirit". Scott not only clearly defines the value of the *enclosed void* as the centre of architectural action, but also anticipates the second component of it: *movement*. In this regard, a few years earlier, Henry Focillon stated (1934, p. 28): "By its essence and its

purpose, the art of architecture takes place in real space, the space in which our walk moves, occupied by the activity of our body [...] We must not forget that architectural mass simultaneously presents a dual aspect: external mass and internal mass, and that the relationship between one and the other is of singular interest for the study of architectural form". Focillon emphasises a series of concepts, starting with that of the body moving in space, *the space in which our walk moves; occupied by the activity of our body*, which constitutes the theoretical basis for establishing the concept of sequence and therefore of perception in architectural space-time. In the Italian cultural sphere, Bruno Zevi published the book *Saper vedere l'architettura* in 1948, a fundamental historical-critical work, in which the author proposes a historiography of architecture based on the concept of interior space. Luigi Moretti in his article *Discontinuity of Space* in *Caravaggio*, in *Spazio* n° 5, 1951 (Podda, 2024 pp 109-115) finds the breaking point at a precise moment when he writes: starting from that late Renaissance in which one begins "out of a sort of biological fatigue, or rather out of the fatal pendular opposition of the spirit to worlds already conquered, to concentrate the density of reality on particular areas of the surface of representation and to empty others." (Podda 2024, p. 115) As we have already mentioned in the introduction to this article, referring to the thought of L. Wittgenstein (1922), the real world appears to us in a full and coherent totality. Reality is an indissoluble whole, it is a system of structured facts. It is precisely the relationship between these two elements, *facts* and *structure*, that Moretti addresses, albeit in different terms. When Moretti uses the term *Discontinuity*, he is referring precisely to a specificity of the relationship between these two elements, basing his interpretation on the pictorial work of Caravaggio. It is here that he identifies the crisis of the *coherent unity of reality*, the moment in which, in his view, the totality of

the work begins to disintegrate and to present gaps, voids, or we could say *silences*, in which the continuity of the *system of structured facts* is, so to speak, *deconstructed* or, rather, decomposed and dissected and then *thickened into clots of reality* separated by what we could call *voids of reality*. Moretti (1951) writes: "In a cut shoulder an entire human structure is summoned, in a short space a world is condensed"; there is clearly a very important conceptual passage here, which, as Moretti points out, upsets the homogeneity of space in Renaissance representation, raising it to an unprecedented level of exaltation and expressive power. Moretti, analysing Caravaggio's work, realises that his approach inscribes a very important paradigmatic leap in the history of figurative representation. In his works he finds a reality made up of "centralised compositional blocks that constitute the first figurative chains cut into a world devoid of interest, bordering on emptiness". (Podda, 2004 p. 116) The transition takes place by shifting the axis of the figurativeness of the work, from the *whole form* to its decomposition into *several parts*, thus implementing a *fracturing of reality*, which in turn determines a necessary subsequent recomposition according to new and unprecedented possible narrative syntaxes. Each part is an "extremely dense lump" of communicativeness, so much so that it can contain the communicative value of an entire form; the parts then resonate with each other and the entire composition comes to life. If Moretti identifies the fracture of space in Caravaggio, Giedion (p. 432), in his book *Space, Time and Architecture*, identifies Cubism as one of the moments in which the concept of the so-called *fourth dimension* was most vigorously clarified. He writes: "Cubism breaks with Renaissance perspective. It sees objects relatively: that is, from different points of view, none of which has exclusive authority. By dissecting objects, he sees them simultaneously from all sides, from above and below, from within and without. He moves around and

inside his objects. To the three dimensions of the Renaissance, which have remained the constituent facts for so many centuries, a fourth dimension is thus added: time. [...] The presentation of objects from different points of view introduces a principle intimately linked to modern life: simultaneity. It is a chronological coincidence that Einstein began his famous work, *Electrodynamik bewegter Körper* (Electromagnetism of Moving Bodies), in 1905 with a precise definition of simultaneity". The movement of the body in vacuum allows us to see *dynamically*, a dynamism that makes the acquisition of reality similar to a flow of impulses in which the human observer is immersed and of which she/he is not only the decoding instrument but also the motor and generator. With a body that teaches us to push, contract, strain and touch, we gather experiences that help us perceive features of the world. The body and its emotional underpinnings, both conscious and preconscious, are shaped by the world but also by the way we think and act. Zevi (1960, p 52) writes in this regard: "In architectural spaces, man does not merely observe an object from the outside or penetrate it with his soul and imagination; he is immersed in it, absorbed in a cosmos that operates through an infinite multiplicity of coordinates and the duration of their continuous rhythm". Rem Koolhaas, in his essay *Junkspace* (2001), uses the metaphor of a "spider's web without spiders" to describe contemporary space, characterised by fragmentation and an absence of intrinsic coherence. He states: "Junkspace is a web without a spider; although it is an architecture of the masses, each trajectory is strictly unique" (p. 36). This image highlights how modern spaces are often the result of globalised and impersonal forces, lacking a unifying design intent, leading to experiences of alienation and disorientation. In contrast, Henri Lefebvre, in *The Production of Space* (1905), argues that space is actively produced by human beings through their social interactions and

everyday practices. In this perspective, human beings are like spiders weaving their webs, creating meaningful and lived spaces. Koolhaas' analysis emphasises how the production of spaces by anonymous, globalised forces leads to a loss of identity and orientation, while Lefebvre's view emphasises the importance of human action in creating environments that reflect social needs and values. This comparison highlights the tension between spaces generated by impersonal processes and those created through conscious human involvement, highlighting the implications that such modes of spatial production have on people's everyday experience. Turning to the present, as Harry Francis Mallgrave (2015, p.10) points out in his book *The Empathy of Spaces*, the knowledge gained in recent decades from cognitive neuroscience corroborates these insights and attributes a central role to "sensory-motor mechanisms". We are thus, writes Mallgrave (2015, p. 10), "embodied beings in which mind and body, environment and culture are interconnected at different levels" and our experience of the world is predominantly situated in architectural space, where every perception "corresponds to a hedonic/affective experience that conditions our evaluations, even the seemingly *objective* and rational ones." Gallese introduces the concept of "embodied simulation" to describe this process, which involves perceptual, experiential and imaginative phenomena that constitute our mode of openness to the world. (Ammannati-Gallese 2014, p.23-48)

THE CRISIS OF THE CITY, THE DISAPPEARANCE OF THE CONTACT SPACE

Moving from the general discourse on the multiple meanings and characteristics of space in its various expressions and architectural phenomena, we now reflect on the urban context. This analysis aims to assess, within the spatialities of urban history, the



Fig.1 - "The contact space" Saint Martin of Londres. Romanesque church and surrounding wall of the former priory. CHOAY, F. Spazi Urbani nel Tempo. Skira, 2003, p 23.

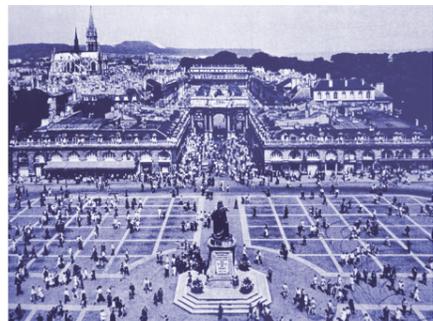


Fig.2 - "The scenic space" Nancy, Meurte et Moselle, Place Stanisls. View from the town hall on the 'Place del la Carrière' and the 'Place du Fer à Cheval'. CHOAY, F. Spazi Urbani nel Tempo. Skira, 2003, p 65.

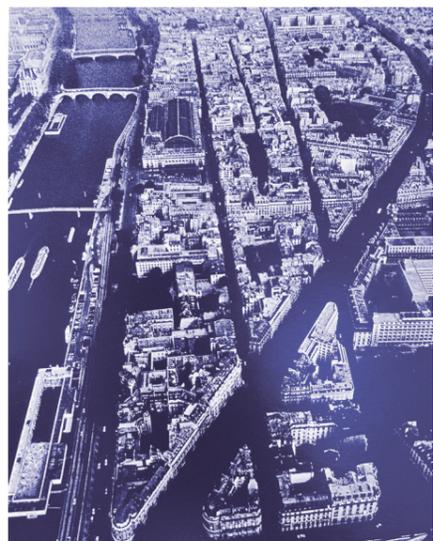


Fig.3 - "The circulation space" Paris, view of the boulevard Saint Germain, part of Haussmann's first network of street engravings, 1855 CHOAY, F. Spazi Urbani nel Tempo. Skira, 2003, p 83.

value of what, using the terminology of the philosopher of art Dino Formaggio, has been termed "bodily intuitions." Through this perspective, we examine the shift in meaning from historical categories

that traditionally define the *city* to an idea of the city that helps us understand the contemporary condition. A crucial reference for this analysis is Françoise Choay's book *Espacements: Figures of Urban Spaces over Time*, in the Italian version edited and translated by Ernesto d'Alfonso in 2003. The book defines, in a very effective way, the "Figures of Urban Spaces over Time" and their evolution. Although focused on the French city, its synthesis makes it applicable as a model for Western cities in general. Choay identifies an evolutionary sequence of urban space, first presented in her 1969 edition, covering a timeline from the Middle Ages to the 20th century. She defines four phases to codify the *mutations of urban space*. The Italian edition of the text from the early 2000s includes an additional contribution by Ernesto d'Alfonso, offering a perspective on contemporary conditions. However, over two decades later, these conditions have evolved further, prompting a need for updated terminology, potentially introducing a fifth phase. Choay's terminology provides a clear framework linking historical periods and the key concepts that define their urban characteristics. Her approach keeps together urban space, thresholds of evolution, and the human body, understood as a *sensitive body*. The discussion begins with the Medieval Urban Space, which Choay defines as "Space of Contact" (Fig.1). This term highlights the characteristics of this spatiality, where a tactile and concrete relationship between the body and space is fundamental. In this context, the city wall, which encloses and compacts the urban form, plays a crucial role. Choay writes that the closed and limited space "contributes to creating a sense of belonging and community in the inhabitants. [...] The walls materialize the singularity and unity of the city, opposing the surrounding countryside. [...] However, this assertion must be mitigated because the closure is not total. Since its origin, the Western city has also been an opening, an overflow, a suburb. [...] Inside the city (Medieval), the land is occupied

according to the mode of contiguity and proximity. [...] Everything and everyone touch in the street, from one building to another" (Choay, 2003, pp. 18-22). The medieval city is thus a "microcosm," where space appeals to bodily perception and material sensitivity, unifying the body and urban space in an almost magical manner. The next phase is the Classical Urban Space, which Choay defines as "Scenic Space" (Fig.2). The transition from the medieval to the classical city marks a paradigmatic shift. Choay attributes this change to three main factors: technological, political, and intellectual. "The evolution of offensive weaponry makes the ancient walls ineffective [...] in terms of transport, the road imposes itself [...] on the political level [...] there is the triumph of the nation-state with the characteristic form of absolute monarchy. The Europe of capitals is born; the urban space that historians call classical or baroque is specifically that of capitals. [...] Finally, intellectual research plays a role that should not be minimized. Starting from the 15th century, Italian artists, Masaccio, Piero della Francesca, Brunelleschi, later imitated by subsequent generations, attempted to reorder the world through an abstract conception of space. It definitively aestheticizes the urban landscape and simultaneously prefigures the great scientific and philosophical break of the 17th century perpetrated by Galileo and Descartes. They are the ones who empty space of its magical qualities, reducing it to extension and number" (Choay, 2003, p. 49). An additional rupture occurs between the 19th and 20th centuries, which Choay defines as "Space of Circulation" (Fig.3). The Industrial Revolution and rapid demographic growth establish new urban paradigms. Choay describes how Haussmann's Paris (1853-1870) exemplifies this shift: "Haussmann understood that the ancient community was dead, that it was necessary to transform the urban agglomeration into an effective tool for production and consumption. For this, he builds what he calls a 'general circulation system.' [...] A street has as its sole

reason for being the connection between two points" (Choay, 2003, pp. 78-79). In this phase, urban space is primarily structured for mobility, and communication is no longer based on bodily proximity but on technological advancements like the telegraph, telephone, cinema, and television (Choay, 2003, pp. 90-96). The fourth category identified by Choay is the "Space of Connection" (Fig.4), a contemporary paradigm that aligns with globalized urban conditions. She describes how "the perfection of transport systems reduces the distance between places and their ancient influence, allowing individuals almost planetary belonging. The development of telecommunications and mass media enables the homogeneous diffusion of information through a global space that promotes and establishes unity. [...] The space of connection surrounds us virtually" (Choay, 2003, p. 105). Although Choay acknowledges the persistence of traditional urban cores, she recognizes their integration into networked spatialities. The transition to digital space has profoundly transformed bodily experience and spatial perception. Manuel Castells introduces the concepts of "space of flows" and "space of places" to describe this evolution. The "space of flows" refers to digital networks and information exchanges that transcend physical localization, while the "space of places" pertains to interactions occurring within specific geographic contexts (Castells, 1996, p. 412). Paul Virilio expands on this by discussing the "evaporation of materiality," where increasing digitalization leads to a loss of tangibility in human interaction (Virilio, 1998, p. 67). Despite the increasing overlap of time and space, the human body remains a mediating element between the volatility of thought and the concreteness of the world in which thought is expressed. In this scenario, the concept of the transmediated self emerges, where individuals continuously navigate between the virtual and the real, experiencing an existential condition characterized

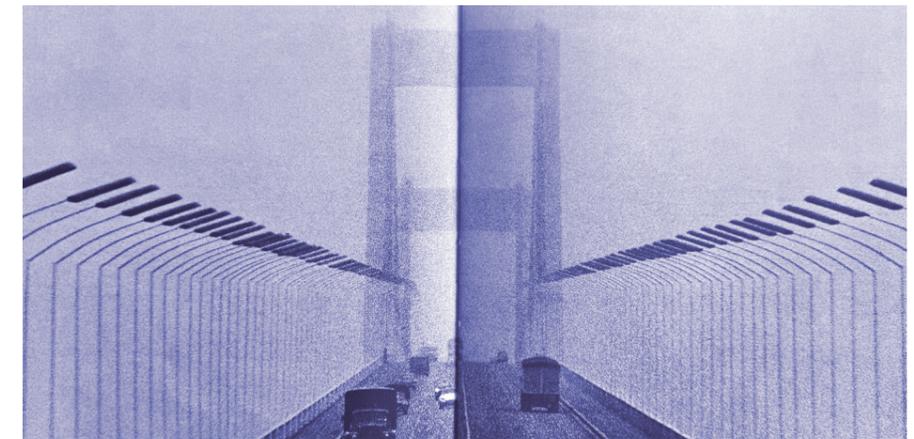


Fig.4 - "The connection space" Bordeaux, Gironde. Pont d'Aquitaine, suspended from a reinforced concrete framework, opened to traffic in 1968. CHOAY, F. Spazi Urbani nel Tempo. Skira, 2003, pp 106-107.

by constant interaction with both digital and physical environments. This dual belonging requires a new understanding of dwelling, integrating bodily presence with digital identity.

TOWARDS THE DECANONIZATION AND DIS-BELONGING

Until the 1970s, as Choay's studies illustrate, the "space of connection" could still adapt to previous urban paradigms (*Medieval/Contact - Classical/Scenic - Industrial Revolution/Circulation*) through shifts in scale and successive integrations. Today, however, the new digital era and its "exponential technology" (Kotler, Diamandis 2012) connection space present the challenge of coexistence between new and old forms, particularly concerning the "space of contact," which plays a primary role in the body-urban space relationship. This progressive disconnection, now seemingly irreversible, drives cities and their inhabitants toward a true "decanonization" (a lack of a shared framework) of urban space, which consequently degenerates into what French philosopher Marcel Gauchet, in *Un monde désenchanté* (2004), terms a "pathology of dis-belonging." Urban space, in its material essence, passively participates in the crisis of its distinctive characteristics, with spaces of contact (public areas historically dedicated to encounter and exchange) losing their appeal to virtual spaces or

confined private ones, such as large shopping centers. These spaces, only superficially public, serve as condensers of flows and connectors between virtual networks and real activities, though their core function revolves around the exchange of goods and, therefore, shopping. The origins of this process do not lie solely in the rise of thematic networks but in a convergence of long-active factors. R. Koolhaas (2001, p. 36) helps define this shift: "Shopping, with its frenetic demand for profitability, cannot be public: we are facing a paradigm shift where public and private transform into known and controlled versus residual and abandoned." He later identifies this phenomenon as *Junkspace*, explaining, "Junkspace is elusive, something we don't want to understand but must eventually, as it's likely the only space left. [...] Junkspace is what remains after modernization has run its course or, rather, the container in which modernization occurs." As Ernesto d'Alfonso observes, "The acceleration of speed, mass attendance, and functional accumulation demand a large-scale architectural type - a megastructure alien to its context" (d'Alfonso, Samsa, 2001, p. 284). This introduces the hybridization and mutation of typologies, driven by factors detached from local contexts and oriented toward large-scale urban morphotypes. The new urban entity, severed from its immediate environment, establishes privileged connections not with local surroundings but with extensive, infrastructure-rich



Fig.5 - "The exponential space" A group of young people who do not engage with space in its physical and tangible qualities. This reflects the weakening of physical, contact-based space in favor of the virtual realm of disconnection and non-belonging (Suzhou, 2024).

and simultaneity. Over 35 years ago, Foucault introduced the concept of the "epoch of simultaneity." Yet, despite the virtual's dominance, architecture's end-user remains the corporeal human being. Recognizing this, architects must address the dual network of real and virtual systems, leveraging contemporary technological standards. The mass digital network challenges traditional notions of control, introducing a collective hyper-subject, as Mario Costa describes: "A community of minds and computers working together on tasks where the individual self is removed" (Costa, 2012, p. 84). Alongside this mastery enabled by vast storage and processing capabilities, urban unity erodes. Rapid changes disrupt the stratification and sedimentation essential for urban processes, replacing coherent rules with fragmented, abstract experiences. Architecture is increasingly called upon to provide solutions incorporating technological and media prostheses, particularly those arising from pervasive digital networks, reflecting the series of changes still unfolding. We are gradually advancing into the domain of mediated virtual presence, which rivals corporeal presence. While this transformation appears inevitable, it demands an increasing understanding of technological processes to operate with intentionality. As Alberti stated in *De re aedificatoria*: "Recognizing construction as a fundamental activity compels us to ask: from what principles does it originate, and how can its elements be defined amidst the infinite diversity of human endeavors?" In light of these developments, exponential connectivity technologies now constitute an essential "material" for the new fifth paradigm of urban space: "exponential space" (Fig.5), where the impermanence of the body and physical contact is diminished or even negated. At this juncture, space undergoes a transformation that transcends the mere digitization of places, generating an expanded, mediated, and alternating corporeality through an exponential oscillation between physicality and intercorporeality.

Though the body, in its finitude, persists in its vital "aesthetic-sensual" essence, it is here disempowered in its role as a consolidator of reality's experiential dimension. What Dino Formaggio (1996, pp. 13-14) terms the "science of bodily intuitions" necessitates carving out a new conceptual space. *Exponential space*, proposed here as the *fifth category* emerges as an evolution from a *space of contact* to a *space of connection*, and finally to a *prosthetic-multiple space*. Acknowledging its hybrid nature, characterized by escalating tensions between presence and absence, embodiment and virtualization, its evolution aligns with the accelerated transformations of cognitive and sensory experiences. This is not a mere shift in scale but a paradigmatic mutation that challenges the *foundational principles* of spatial perception. In this context, Henri Bergson's notion of *duration* (1907) regains relevance, as virtual simultaneity fractures temporal linearity. Similarly, Vittorio Gallese's studies on *embodied simulation* (2005) emphasize how neurobiological mechanisms of perception are reshaped by digitally mediated realities, where the physical environment ceases to be the primary reference for sensorimotor experiences. Architecture must thus rethink its role within a framework where the built environment is no longer the sole medium through which space is experienced. *Exponential space*, in its current state, is characterized by fluidity, dematerialization, fragmentation (Fig.6). It no longer adheres to classical principles of spatial composition but follows the logic of networks, flows, and instantaneous interactions. A city conceived under these premises becomes less a place of permanence than a transient landscape – an ephemeral node within a continuous flow of information and relationships. In this sense, the future city is not static but perpetually reconfiguring itself, challenging architects and urban planners to redefine their tools, methodologies, and theoretical approaches to space.

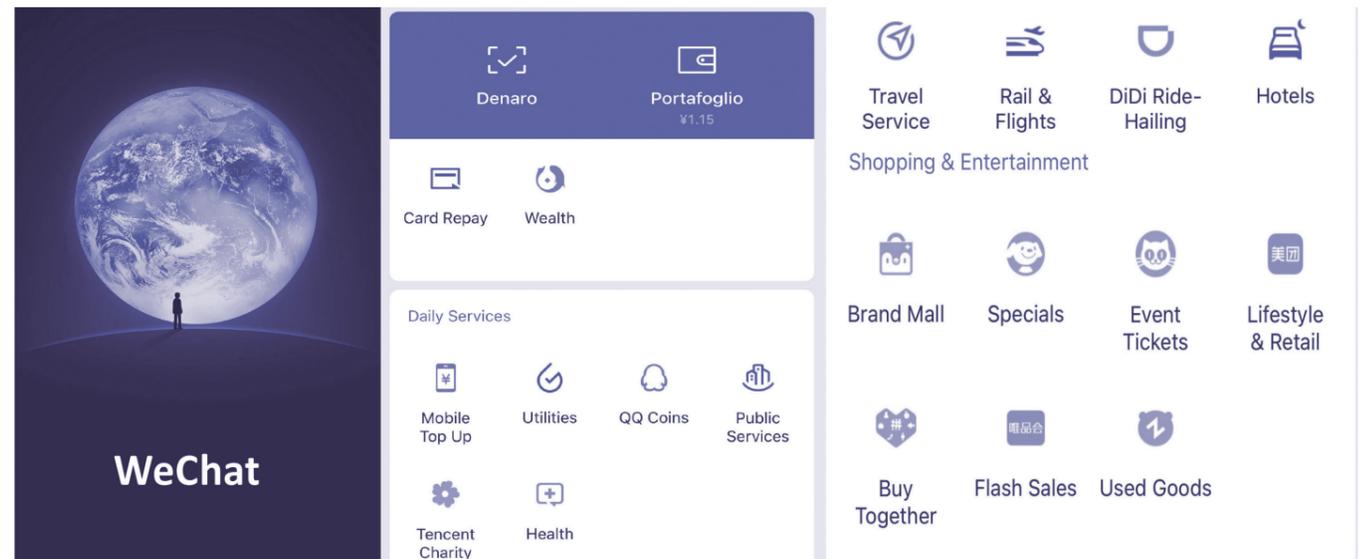


Fig.6 - "exponential space platforms" Screens related to the Chinese WeChat platform. The platform lies at the core of economic, social, and urban spatial dynamics in contemporary China. Through it, users can access a wide range of services: mobility, entertainment, healthcare, shopping, events, lifestyle, payments, and more. WeChat embodies the primary interface between "individuals and the world" in China. Photo by the author (Suzhou, China, 2024).

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