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The Physical, the Digital and the Hybrid in Narrative Storyworlds: A Preliminary Framework

Przestrzenie fizyczne, cyfrowe i hybrydowe w narracyjnych światach przedstawionych: wstępne ramy teoretyczne

Abstract

The article addresses the ontological complexity of the represented world in contemporary narratives depicting digital realities. Drawing on Marie-Laure Ryan's typology, it proposes a new perspective on the construction of the storyworld, at the centre of which lies the complex relation between material and digital spaces. The first part of the article offers a brief overview of the evolution of the concept of "digital space" and of the changing spatial imaginary in the early representations of digital worlds in cyberpunk fiction. Next, it presents the typology of place experience in the digital era formulated by Juncheng Dai and Fangyu Liu. The main part of the article proposes a new theoretical framework, based on the model developed by Dai and Liu. The proposed framework makes it possible to reconstruct the complex ontological structures of contemporary narratives, in which the physical, the digital, and the hybrid coexist in different and dynamic configurations.

Keywords: narrative space, physical, digital, hybrid spatiality, storyworld.

Abstrakt

Artykuł podejmuje problematykę ontologicznej złożoności świata przedstawionego we współczesnych narracjach przedstawiających światy cyfrowe. Opierając się na typologii Marie-Laure Ryan, proponuje nowe spojrzenie na konstrukcję świata opowieści (*storyworld*), w którego centrum znajduje się złożona relacja między przestrzenią materialną a cyfrową. W pierwszej części artykułu omówiona zostaje pokrótce ewolucja samego pojęcia „przestrzeni cyfrowej” oraz zmieniające się sposoby obrazowania pierwszych literackich wizji światów cyfrowych w cyberpunku. Następnie przedstawiona zostaje typologia doświadczenia miejsca w erze cyfrowej, zaproponowana przez Junchenga Daia i Fangyu Liu. Część zasadnicza artykułu proponuje nową ramę teoretyczną, opartą na modelu Daia i Liu. Pozwala ona na uchwycenie złożonych struktur ontologicznych we współczesnych narracjach, w których sfery fizyczna, cyfrowa i hybrydowa współistnieją w zmiennych i dynamicznych konfiguracjach.

Słowa kluczowe: świat przedstawiony, przestrzeń narracyjna, wymiar fizyczny, cyfrowy, hybrydowy.

Introduction¹

In her article “Digital Space,” Peta Mitchell explores the co-constitutive relation between literature and digital spatialities.² The digital era, she argues, brings further complexities to the already intricate relation between the two concepts: space and literature. Going beyond the traditional dual model proposed by Franco Moretti, which distinguishes between representation (“space in literature”) and production (“literature in space”), Mitchell examines the ways literary fiction has been shaped by the digital and, in turn, how it has helped to shape the understanding of digital space. She argues that the increasingly complex experience and representations of space necessitate an integral approach to account for the different relations between material reality and digital realms in contemporary narratives.

The article examines the relationship between material and digital spaces in the context of narrative storyworld construction. It offers

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2 Peta Mitchell, “Digital Space,” in *Space and Literary Studies*, ed. Elizabeth F. Evans (Cambridge: Cambridge University Press, 2025), 319–335.

a critical review of the changing conceptualizations of digital space and their implications for the spatial modelling of the represented world. Building on the argument of Mitchell and taking Marie-Laure Ryan's typology (2016) as a starting point, the article argues that the reconstruction of spatial models in contemporary texts necessitates a nuanced understanding of the ontological configurations that structure their storyworlds. Thus, drawing on the framework proposed by Juncheng Dai and Fangyu Liu,³ it proposes a typology of narrative spatialities capable of accounting for the complex ontologies, in which the material, the digital and the hybrid coexist in variable and dynamic relations.

Digital Spatiality

Since the emergence of networked computing in the late twentieth century, the conceptualization of digital space and its relation to material reality has undergone a series of significant transformations. What began as a largely technical and abstract notion, referring to the interior of computational processes and mathematical operations, gradually gave way to more elaborate taxonomies, fully developed spatial imaginaries and theoretical considerations that emphasize an inseparable, constitutive relation between the two realms.

One of the early conceptual frameworks related to digital spatialities is formulated by Michael Batty in "Virtual Geography."⁴ Batty coins the term "cspace" to define the "abstractions of space into c(omputer)space, inside computers and their networks."⁵ Although the concept emphasizes the abstract, operational character of digital processes, Batty nevertheless acknowledges their relation to material reality. Computation, he argues, constitutes "two-way traffic in that it is largely abstract and ethereal but it is also changing the material reality which is the subject of that abstraction in the first place."⁶ The emerging field of virtual geography is thus understood as "the study of place as ethereal space and its processes inside computers and the ways in which this space inside computers is

3 Juncheng Dai and Liu Fangyu, "Embracing the Digital Landscape: Enriching the Concept of Sense of Place in the Digital Age," *Humanities and Social Sciences Communication* 11/724 (2024): 1–7.

4 Michael Batty, "Virtual Geography," *Futures* 29/4-5 (1997): 337–352.

5 *Ibidem*, 340.

6 *Ibidem*.

changing material place outside computers.”⁷ Batty further distinguishes cspace (the space of computational processes) from cyberspace (the space *resulting from* computational processes), and cyberplace (capturing the impact of computational processes on traditional space).⁸

The conceptualization of digital spatialities changes significantly with the evolution of the idea of cyberspace, which comes to signify a separate, autonomous, experiential realm. The term originates in William Gibson’s *Neuromancer* (1984), which characterises cyberspace as

A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts [...]. A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data.⁹

As Benedikt notes, in Gibson, cyberspace is conceived as “a parallel universe created and sustained by the world’s computers and communication lines. [...] The realm of pure information [...] free of the bounds of physical space and time [...] with the ballast of materiality cast away.”¹⁰ Even though it becomes the space of experience, it is rendered primarily through metaphors and visual images – “lines of light, clusters and constellations of data” rather than through a well-developed sense of place.¹¹ The emphasis falls not on the architectural organization of space but on the pure flow of data, figured as luminous, abstract, and boundless. Placeless, atemporal and disembodied, cyberspace exists “[e]verywhere and nowhere”¹² and is experienced through the immaterial “nonspace of the mind”.¹³

It is only in later cyberpunk fiction, most notably Neal Stephenson’s *Snow Crash*, that cyberspace, recast as the Metaverse, is imagined as a fully extended, spatially developed, and architecturally organised virtual universe – one in which spatial metaphors are no longer merely figurative

7 *Ibidem*.

8 *Ibidem*.

9 William Gibson, *Neuromancer* (New York: Ace Science Fiction Books, 1984), 51.

10 Michael Benedikt, “Introduction,” in *Cyberspace: First Steps*, ed. Michael Benedikt (Cambridge: MIT, 1992), 1–5.

11 Gibson, *Neuromancer*, 51. See also, Cavallaro Dani, *Cyberpunk and Cyberculture: Science Fiction and the Work of William Gibson* (London: Athlone, 2000), 133–163.

12 Benedikt, *Introduction*, 1.

13 Gibson, *Neuromancer*, 51.

but become the structuring principle of the world itself.¹⁴ As Michelle Kendrick observes, Stephenson's Metaverse marks a significant departure from the disorienting, ephemeral quality of Gibson's cyberspace. Rather than figuring digital space as an abstract, data-driven imaginary, the Metaverse is portrayed as a simulacrum of the real world, replicating not only its physical laws but its metaphysical structures as well. In contrast with Gibson's incorporeal realm of data flows, it is a spatially and corporeally organised environment which characters navigate through their bodies.¹⁵

The development of digital worlds into fully realized spatial universes in narrative fiction is accompanied by a reconceptualization of the relation between digital and material realities. In contrast to the separation model, which construes the two as distinct and incompatible, new theoretical frameworks come to emphasise their interrelation and constitutive character. Manuel Castells's influential concept of the "space of flows," defined as "the material organization of time-sharing social practices that work through flows"¹⁶ and contrasted with the "space of places," interprets digital spatiality as an effect of power relations rather than as a natural property of technology.¹⁷

In his 1998 review of the current empirical and theoretical work relating to cyberspace, "Towards Geographies of Cyberspace," Robert Kitchin argues for an integrative understanding of digital and material spatialities. He contends that rather than displacing or supplanting geographic space, cyberspace constitutes an additional layer superimposed upon and coexisting with material spatial structures:

cyberspace, while having a different form from real space, is just an extension of the real world [...] cyberspaces do not replace geographic spaces, nor do they destroy space and time. Rather, cyberspaces coexist with geographic spaces, providing a new layer of virtual sites superimposed over geographic spaces.¹⁸

14 Neal Stephenson, *Snow Crash* (New York: Bantam, 1992).

15 Michelle Kendrick, "Space, Technology and Neal Stephenson's Science Fiction," in *Lost in Space: Geographies of Science Fiction*, eds. Rob Kitchin and James Kneale (London: Continuum, 2002), 60.

16 Manuel Castells, *The Rise of the Network Society* (Chichester: Wiley-Blackwell, 2010), 442.

17 *Ibidem*, 453–459.

18 Robert M. Kitchin, "Towards Geographies of Cyberspace," *Progress in Human Geography* 22/3 (1998): 402–403.

Furthermore, Kitchin emphasizes that the relationship between virtual worlds and geographic spaces is mutually constitutive; spatial transformations bear upon social relations, while social transformations reshape spatial ones.

All in all, the initial conception of the virtual world as a realm wholly separate from material reality has been largely superseded by frameworks that treat digital media as integral dimensions of lived experience. The process reflects a significant shift from the notion of digital space as an abstract, autonomous, placeless realm, associated with digital processes and separated from material reality, towards a conception of hybrid spatiality in which the digital and the material are closely intertwined, inseparable and mutually constitutive. Critical attention has increasingly turned to the ways in which online and offline spaces, social relations, and modes of interaction coexist and mutually condition one another,¹⁹ a reorientation that corresponds to broader transformations in contemporary experience, characterized by the pervasive integration of the digital into all spheres of life.

These changes have profound implications for the sense of reality and for the construction of narratives. As Edward Relph contends in "Digital Disorientation and Place," digital technologies alter people's experience of place in important ways, often producing a pervasive sense of uncertainty and disorientation. They "bring into question what is real and what is fake, confuse real and virtual reality, and exacerbate extreme views about who belongs where."²⁰ While the majority of social, political and legal practices depend on a broadly shared, empirically grounded understanding of truth and reality, digital media facilitate the formation and circulation of alternative realities and counter-narratives irrespective of their factual accuracy or social and political consequences.²¹

It is precisely this condition of disorientation that makes the analytical distinction between different registers of spatial experience crucial. For Relph, addressing the transformations brought by the digital era and mitigating their negative consequences requires not only a solid understanding of contemporary spatialities but also the development of clear theoretical frameworks capable of distinguishing between their constituent parts. Rather than treating the digital and the material as inseparable or collapsing them into a single homogenous spatial domain,

19 See, for example, Paul C. Adams, *Geographies of Media and Communication: A Critical Introduction* (Chichester: Wiley-Blackwell, 2009).

20 Edward Relph, "Digital Disorientation and Place," *Memory Studies* 14/3 (2021): 573.

21 *Ibidem*, 575.

he underlines the need for an inclusive digital sense of place that remains firmly grounded in the material realities of everyday life.²² He emphasizes that only by preserving the analytical distinction between digital and physical spatialities can we adequately account for the complex ways in which digitally mediated environments intersect with, reshape, and yet remain irreducible to material spaces of everyday life. Any attempt to reconstruct and interpret the spatial complexity of the contemporary world must therefore take into account the different principles by which its constituent spatialities are organized, experienced, and socially produced rather than treating them as variations of a single undifferentiated space.

The Physical, the Digital and the Hybrid in the Digital Era

Building on Relph's postulate, Dai and Liu examine historical transformations and theoretical debates concerning the sense of place in the digital era to propose a three-dimensional framework for comprehending how individuals relate to their environments in a technologically mediated age. They argue that contemporary spatialities can no longer be adequately understood through traditional, territorially bounded conceptions of place attachment and formulate a tripartite model that distinguishes between physical, digital, and hybrid dimensions.²³

The first dimension, the physical sense of place, refers to the classical understanding of place as rooted in direct, embodied engagement with geographical environments, whereby individuals develop emotional and cognitive attachments through lived activities, perceptions, and memories associated with material spaces. Crucially, as the authors acknowledge, even this ostensibly unmediated dimension is increasingly transformed and influenced by digital technologies. While tools such as navigation applications, geolocated information services, and platforms presenting local culture can deepen individuals' engagement with physical surroundings, they may also simultaneously erode the distinctiveness of places through the imposition of homogenized, globally standardized content – producing, in effect, the kind of placelessness that scholars like Relph have associated with postmodernity.

The second dimension, the digital sense of place, represents a more radical departure from classical conceptions. It encompasses the attachments

²² *Ibidem*, 572.

²³ Juncheng Dai and Liu Fangyu, *Embracing the Digital Landscape*, 4.

and perceptions that individuals develop through interaction with digitally constructed environments – ranging from virtual reality and the metaverse to simulated spatial constructs and digital representations of real-world locations. This dimension recognizes that people can now develop genuine, emotionally meaningful relations to places that exist entirely online – a city in a video game, a community built on a social media platform, or a virtual environment explored through immersive technology.

Finally, the third dimension, the hybrid sense of place, captures the dynamic and mutually constitutive interrelation between the physical and the digital. It recognizes that in the contemporary world these two realms of experience do not operate in isolation but continuously overlap, compete, and reinforce one another. Today, most people navigate both, simultaneously and often imperceptibly, and in effect, their sense of place is continuously shaped by the fluid transitions between the two: the physical informs the digital, and the digital, in turn, reshapes how individuals perceive, inhabit, and engage with the material world.

Together, the three dimensions offer an inclusive analytical lens through which to study human-place relationships in an era defined by the blurring of boundaries between the material and the virtual. Admittedly, the divisions between the three registers may prove variable and difficult to delineate in absolute terms. As Batty acknowledges in relation to his own theoretical framework, “distinctions are fluid,” “examples are rarely ideal types” and “as in all classifications, the really interesting questions occur at the boundaries of the classes where experimentation and innovation dominate.”²⁴ Yet, the typology itself remains expedient and necessary for comprehending both the increasingly complex contemporary world and, more pertinently to the present considerations, the increasingly complex ontologies of narrative storyworlds.

Textual Spaces

In contemporary narratives, the complex registers of present-day spatialities intersect with the multidimensional configurations of textual spaces. In one of the most systematic studies of the relations between space and narrative, *Narrating Space/Spatialising Narrative*, four

24 Michael Batty, *Virtual Geography*, 341, 347.

interrelated types of textual space are identified.²⁵ The first is the space of the storyworld: the physical environment inhabited and traversed by the characters. In other words, it constitutes the narrative representation or the spatial model of reality in which the characters exist. The second type is the spatial context of the text, referring to the spatial reality that provides the narrative with its contextual framework and, at times, serves as its referent.²⁶ This layer encompasses the spatial realities evoked by the narrative and activated within the reader's interpretative engagement with the text. The third type is the space taken by the text itself as a material object, that is the physical support through which the text is manifested. The spatial properties of this type range from the effectively non-material presence of oral narratives to the three-dimensional form of the printed book.²⁷ Finally, Ryan identifies the spatial form of the text, understood as "the typographical realization of language and the arrangement of words on the page."²⁸ This layer concerns the visual organization and presentation of the narrative as a textual artifact.

In a complementary article, Ryan examines how these four types of narrative space evolve in the digital era. She traces the ways contemporary individuals navigate complex, hybrid realities in which digital technologies reconfigure the spatial context of narrative by anchoring virtual experiences within material environments. Negotiating these layered spatialities requires a lived, active engagement that draws on multiple modes of signification to integrate the represented digital storyworld with the physical space.²⁹ Ryan concludes that the impact of digital technology is most pronounced at the level of the storyworld. In particular, the interactive character of computer games complicates the relations between material and digital spaces and produces new forms of embodiment. Unlike traditional media, computers generate an experiential, navigable spatial environment that can be inhabited and interacted with through the user's embodied presence – an affordance made possible by moving beyond language as the sole medium of digital textuality.³⁰

25 Marie-Laure Ryan, Kenneth Foote, and Maoz Azaryahu, *Narrating Space/Spatializing Narrative* (Columbus: Ohio State University Press, 2016), 3.

26 *Ibidem*, 4.

27 Marie-Laure Ryan, "Introduction: Four Types of Textual Space and their Manifestations in Digital Narrative," in *Digital Narrative Spaces: An Interdisciplinary Examination*, ed. Daniel Punday (London: Routledge, 2022), 6.

28 *Ibidem*, 2.

29 *Ibidem*, 17–18.

30 *Ibidem*, 17–18.

Ryan's work reflects broader tendencies in contemporary narratology. The foundational frameworks of the narratological analysis of space were developed with primary reference to the physical storyworld: an environment in which characters live and move within the material constraints of embodied, physical spaces. This perspective has been broadened by more recent theorizations of narrative in interactive digital environments and by multimodal narrative theory. What remains underdeveloped, however, is a unified typology capable of capturing the ontologically complex spatialities in contemporary narratives. Dai and Liu's tripartite typology of spatial experience offers a conceptual framework that can be applied to the analysis of narrative worlds. The three distinct ontological modes of space it delineates, physical, digital, and hybrid, can be used to distinguish the different and mutually interacting dimensions of contemporary storyworlds.

The Construction of the Storyworld

Ryan defines the storyworld as "the story space completed by the reader's imagination on the basis of the principle of minimal departure."³¹ Under this principle, readers construct mental images of fictional worlds using their real-world knowledge and experiences unless the text explicitly contradicts them. As a result, when actual place names appear in a narrative, their real-world referents are assumed to retain most of their existing characteristics within the storyworld.³² In realistic texts, the storyworld "is conceived by the imagination as a coherent, unified, ontologically full, and materially existing geographical entity."³³ In narratives that incorporate both real and fictional locations, the storyworld is constructed by integrating fictional places into the geographical framework of the actual world. Conversely, in narratives set entirely within imaginary landscapes, readers tend to infer that the storyworld extends beyond the explicitly mentioned locations and encompasses a continuous spatial environment connecting them. Although the details of these intervening spaces remain unspecified, readers nevertheless assume their existence as part of a coherent geographical whole. In addition, narratives can also project impossible or incomprehensible spaces, which either do

31 Ryan, Foote, and Azaryahu, *Narrating Space/Spatializing Narrative*, 24.

32 *Ibidem*, 20.

33 *Ibidem*, 24.

not cohere into a full world or cannot be comprehended by the reader due to their radical ontological difference.³⁴

The Physical, the Digital and the Hybrid in Narrative Storyworlds

While Ryan concentrates on the contrast between real and imaginary locations, possible and impossible spaces, the construction of narrative storyworlds can be more ontologically complex. Spatial models in recent fiction are no longer constituted exclusively, or even primarily, by physical geography or imaginary worlds. Reflecting the complex spatial experiences of the digital era, contemporary texts construct intricate spatialities in which digital, material, and hybrid environments coexist. Storyworlds encompass existing real-world places, digital environments as well as hybrid realms, which mediate between the two.

The **physical story space** represents the world structured by the laws of material geography, physics and biology. It is conceived as the environment in which characters are embodied, which they perceive through their senses, navigate through locomotion and in which they develop the sense of place attachment (*sensu*).³⁵ It is imagined as a coherent, materially existing geographic entity, which consists of both real and imaginary locations, superimposed onto the geography of the actual world.³⁶ What is more, the physical story space constitutes a setting that the reader may associate with a particular socio-historico-geographic reality and, as such, correlate with specific rules, values and properties.

The **digital story space**, by contrast, is governed by an entirely different ontological logic; its spaces are constituted not by material geography but by code, interface, algorithm and protocol and, as such, are not bound by the laws of the actual world. This does not mean, however, that characters are necessarily disembodied and free from any constraints associated with material geography, physics or biology. Since the rules of this realm are defined entirely by code, these constraints may or may not apply or they may apply selectively. What is more, they may differ in relation to specific places or characters. The same is true about the representation of social, historical and geographic realities. The digital world may or

34 *Ibidem*, 24–25.

35 Yi-Fu Tuan, *Space and Place: The Perspective of Experience* (Minneapolis: University of Minnesota Press, 1977).

36 Ryan, Foote, and Azaryahu, *Narrating Space/Spatializing Narrative*, 24.

may not correlate with specific socio-historico-geographic reality and its particular rules, values and properties or may do so selectively. What is crucial, the representations of digital story space vary from placeless, abstract realms (e.g. cyberspace in William Gibson's *Neuromancer*) to richly elaborated spatial universes (e.g. the Metaverse in Neal Stephenson's *Snow Crash*). Digital realities may be symbolically conceived as "space of flows" or as the more traditional "space of places."³⁷

Finally, **the hybrid story space** is irreducible to either of the previous categories. It emerges from the intersection, interpenetration, and mutual constitution of physical and digital experiences of characters. The hybrid story space is characterized by ontological superposition in which material and digital layers coexist within a single represented environment, impacting and transforming one another in ways that generate new rules, properties, values and meanings. Like the digital story space, it can be conceived both as a placeless, abstract realm of experience and as the space of places; it can be simultaneously real and imagined, material and virtual.

The fact that the three ontologically different domains constitute potentially distinct realities has important consequences for the construction of the narrative storyworld. Each may generate different types of events, characters and narrative forms. The distinctive properties, rules and values may function differently in the construction of the character, plot, symbolic meanings and, most importantly, world-modelling. The three realms may construct different forms of embodiment, distinct temporalities and different axiologies of spatial relations, which redefine the meaning of traditional spatial properties and concepts. Each domain may operate with a distinct spatial language and imagery and construct very different symbolic meanings.

As Yuri Lotman argues, the plot event, that is a significant event in the story, is constituted by the transgression of a structurally significant boundary. For him, the development of the plot requires that a character transgress a boundary separating spaces operating according to different rules, values, and possibilities.³⁸ The more distinct the worlds, the more semiotically and narratologically significant the transition. Crossing the boundary between ontologically distinct worlds entails a transition into a different world model, ruled by different conditions of existence, and thus constitutes a significant plot event. Since the boundary separates

37 Manuel Castells, *The Rise of the Network Society*, 453–459.

38 Yuri M. Lotman, *Universe of the Mind: A Semiotic Theory of Culture* (London: Tauris, 1990), 131–142.

not only different structures of value, norms and symbolic orders but distinct ontological realities, the event of its crossing may reconfigure multiple aspects of narrative construction.

When the boundary is ontological, character identity may become unstable or fragmented as a single protagonist may manifest distinct forms, attributes and features on either side of the divide. This carries significant narratological consequences since neither the coherence of characterization nor the continuity of personal identity can be presupposed, and transformations in one domain do not necessarily entail corresponding transformations in the other. What is more, boundary-crossing may involve temporal dislocation as well as spatial displacement. Ontological boundaries frequently construct divergent temporal regimes as digital and hybrid spaces may operate according to different rules than the linear, irreversible temporality that governs embodied existence. Such contrasts complicate both plot construction and the principle of narrative causality, since events occurring on one side of the boundary need not stand in causal or chronological relation to those unfolding on the other. At a broader structural level, the coexistence of incompatible ontological realities raises the question of which world model dominates and defines the narrative storyworld as a whole or, indeed, whether a single governing model can be posited at all. Given that divergent ontological realms may exemplify radically different socio-political realities, the interpretation of the storyworld must attend not only to the relations of power and social organization that each constructs, but also to the ideological implications of their juxtaposition.

Conclusion

Contemporary narratives, reflecting the complex spatial and ontological experiences of the digital era, construct storyworlds in which characters traverse ontologically distinct realms. While clear boundaries and discrete ontologies may not always be easy to map and indistinct or boundary experiences may prevail, a typology capable of capturing the ontological complexity of such storyworlds remains both analytically expedient and theoretically constructive. The proposed framework, distinguishing between physical, digital and hybrid story spaces, offers an analytical lens for interpreting the variable configurations in which narrative spatial structures are organised. The outline of the defining features of the three realms and of their impact on the construction of different narrative elements, such as character, plot, temporality, causality, and

world modelling, offers a preliminary formula whose analytical purchase remains to be demonstrated through sustained engagement with concrete narrative texts.

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