Space Agnosticism as a Challenge to Modernity: A Comment on Jean Robert's Article "Place in the Space Age"

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Abstract

We could better characterise the so-called crisis of the West as a crisis of Modernity. To be even more precise, it would be a crisis of the Cartesian picture of the world. Swiss-Mexican philosopher Jean Robert suggests a way out of this crisis. By questioning the supposed apodicticity and universality of Cartesian space, he opens new horizons for philosophical and scientific studies. This article explains Robert's space agnosticism: where it comes from, and where it leads. The main argument is that reconstructing a philosophical and scientific account based on the understanding of hyperbolic space, in substitution of Euclidean space, would give solid ground for true knowledge. In this way, we could recover the so-needed credibility and trust to live among each other and within nature.

Keywords: modernity, Euclidean space, hyperbolic space, Cuernavaca School, epistemological rupture.

There are these two young fish swimming along, and they happen to meet an older fish swimming the other way, who nods at them and says, "Morning, boys. How's the water?" And the two young fish swim on for a bit, and then eventually one of them looks over at the other and goes, "What the hell is water?"

David Foster Wallace, "This Is Water: Some Thoughts, Delivered on a Significant Occasion, about Living a Compassionate Life" (2005)

We normally think of ourselves and everything around us as being in space. But is "space" really already a given, as water is for a fish? Since we cannot get out of space, we cannot know it for sure, but by simply asking about this we enter the domain of philosophy of science. We cannot think philosophically about the notion of space without considering the scientific implications of our wonderings. Space, together with time, is a central notion of our modern scientific understanding of the world. If we question the notion of space, we are doubting the very roots of our knowledge, and people would immediately —with very good reasons— be scared. How can we proceed with our wonderings on this topic without losing ground? The architect and philosopher Jean Robert (Moutier, Switzerland, 1937–Cuernavaca, Mexico, 2020) made an initial attempt that deserves study.

The invention of the notion of space is the origin of Modernity.[1] This is the main thesis proposed by Jean Robert in his article "Place in the Space Age."[2] Thinking as the architect he was, he opened a window for philosophical reflection. In fact, by thinking deeply about the idea of space, he himself became a philosopher of the city. When he states that if a hundred years before Newton no one knew space, and then Kant was wrong to consider it a universal a priori, he forces us to take his ideas seriously. The challenge that he poses opens the possibility for completely new questions about us and the world we live in. After reading him, one feels there is a wide-open room for philosophical and scientific creativity.

Robert's article should be read as part of a moment of rupture. When questioning space, he is calling for a completely new cycle of the scientific process. The enormous endeavour of reshaping science, however, is obviously not to be found in a short paper like the one we are commenting on. Science is progressive, but, as sustained by Gaston Bachelard, is also discontinuous,

[1] The word Modernity is capitalized in this article to indicate that it is used in a technical way that will gradually be made clear. It does not refer to modern culture, as a feature displayed by persons, institutions, or policies, but to a specific era in human history that could be very well labelled the *Space Age*.

[2] Jean Robert, "Place in the Space Age," *The International Journal of Illich Studies* 6, no. 1 (2018): 87-112. https://journals.psu.edu/illichstudies/article/view/60682.

successively ruptured and rebuilt. Bachelard is well known for introducing the term *epistemological rupture*, which denotes a radical shift in the structures of knowledge. In its own dynamics, scientific thought must firstly break with unthought or ingrained preconceptions, the epistemological obstacles that hinder knowledge. This is, at the end, the logic of scientific revolutions.

The new cycle of the scientific process for which Robert is calling must be considered only at the beginning, and where a deeper epistemological rupture is still needed.[3] It is in this context that the notion of space is questioned. "However surprising it might sound, space, strictly speaking, a perfectly homogeneous nothing, is a historical construction."[4]— Robert states. "It had a beginning and therefore might now approach its demise."[5] Modernity is reaching its end, but the process of building new scientific accounts must necessarily be undertaken in stages: first agnosticism, then scientific research, in the hope of reaching, at a final shore, a new notion of our environment, one that would provide us with grounds for a better coexistence between humans and with nature.

The purpose of this article is to comment on and, within my own limits, explain Robert's ideas. I will do this in three steps. In step number 1, I consider the cultural and, above all, intellectual environment of Jean Robert, which is of primary importance for understanding his method and main ideas. In step 2, I go deep into Robert's philosophical sources, especially in Patrick Heelan's *Space Perception and the Philosophy of Science*.[6] Finally, in step 3, I call for academic consideration of Jean Robert's space agnosticism and for more philosophical and scientific research, with new horizons in mind.

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[3] For this reason, this paper, as well as Robert´s article, is not trying to achieve academic precision, and may sometimes seem merely evocative. I will try, when the case demands it, to add some explanatory notes like this one.

[4] Robert, "Place," 92.

[5] Robert, "Place," 94.

[6] Patrick Heelan, *Space Perception and the Philosophy of Science* (University of California Press, 1983).

The intellectual context of Jean Robert and his method.

Jean Robert is part of what Humberto Beck has called the Cuernavaca School of critical studies.[7] He arrived in 1972 at the Mexican southern city of Cuernavaca, where he joined Ivan Illich (Vienna, 1926–Bremen, 2002) in the Centro Intercultural de Documentación (CIDOC), where the latter hosted prominent thinkers, like Paul Goodman, Erich Fromm, Susan Sontag, André Gorz, Paulo Freire, Carl Mitcham, among many others. In the 1970s, the CIDOC became the headquarters from which Illich launched a profound critique of industrial society. Most of the thinkers came and went, but Robert permanently settled in Cuernavaca, where he lived walking the streets and winding roads of that city, crossed by 46 main ravines. After meeting Illich and writing his first book against the monopolistic tendency of motorised transport to shape cities, he made a personal choice to renounce having a car of his own, so he used to walk through the city's meanders. It is mainly for this reason, Illich's CIDOC and Robert's decision to put down roots in the city, that it has become feasible to begin speaking of the Cuernavaca School of Critical Thinking.

Technological asceticism

Jean Robert's ideas are so close to Illich's that it is impossible to comment on the former without reference to the latter. Robert used to present Illich as the inventor of a science that still does not exist. For Carl Mitcham, a prominent contemporary philosopher of technology, Ivan Illich should be considered one of the main critics of the "technogenic way of life."[8] Illich became widely known in the 1970s for a set of five critical books written in CIDOC that denounced the most prominent modern institutions as counterproductive: Celebration of Awareness. A call for institutional revolution (1971), *Deschooling Society* (1971), *Tools for Conviviality* (1973), *Energy and Equity* (1974), and *Medical*

[7] Humberto Beck, "Ivan Illich: A Philosophy of Limits," *Conspiratio*, Fall (2022): 54–66, https://thinkingwithivanillich.net/wp-content/uploads/2022/10/Ivan-Illich-A-Philosophy-of-Limits-.pdf.

[8] Carl Mitcham, "The Challenges of This Collection," in *The Challenges of Ivan Illich: A Collective Reflection*, ed. Lee Hoinacki and Carl Mitcham (State University of New York Press, 2002), 17.

Nemesis (1976). As Illich himself frequently told Jean Robert, he was then trying to set the intellectual framework of what, in his view, a post-industrial society must be. He thought it should be possible to imagine a society that could truly take advantage of what industrialisation brought, without falling into extreme dependence on technological devices, and becoming addicted to and enslaved by technology. The distinction between autonomous action and heteronomous satisfaction of needs, and the trends in industrial societies to privilege the latter, is central to understanding Illich's critique of the relationship between modern societies and their technologies. However, two decades later, Illich became strongly discouraged by the direction that historical events had taken regarding societal dependence on technology, so his method shifted from social criticism to a deeper historical archaeology of modern certainties.

In the preface to Ivan Illich's *Collected Works* in Spanish, Jean Robert speaks of a methodological break in Illich's work following the closure of CIDOC in 1976, after which he became an itinerant philosopher [9] and moved to what we could call the academic peripheries. This break corresponds to what Mitcham describes as the replacement of social criticism by, first, historical archaeology in the 1980s and then, historical elegy in the 1990s.[10] He was not alone. As Robert and Mitcham reported, the endeavour became a collective project of researchers from a wide range of disciplines who met several times a year to present their projects around Ivan Illich's table. It is in this context that "Place in the Space Age" was written and presented at the Oakland Table meeting, hosted by Ivan Illich and the city Mayor, Jerry Brown.

From the 1980s on, Ivan Illich's studies migrated from the material power of technology to its symbolic power. He stopped asking about what tools and machines "do" to society, but about what they "say." Illich identified one key characteristic of the

[9] Jean Robert and Valentina Borremans, "Prefacio," in *Iván Illich. Obras Reunidas*, vol. 1 (Fondo de Cultura Económica, 2006), 23.
[10] Mitcham, "The Challenges," 18–19.

"recasting of the ego" by technology: disembodiment.[11] To face it, his later work was rooted in a technological ascesis, which is "a critical distancing from the symbolic effects of mind-boggling (technology) that increasingly shape self-perception and subjectivity,"[12] an ascesis that starts in the body and mind, but that also becomes "an indispensable matrix for the recognition of tipping points" in the search for knowledge.[13] This change in Illich's method has two main implications. On the one hand, the depth and scope of his research proved, in my view, incomparably superior. On the other hand, it also—and this is something I will address later—distanced him from the broader scientific and academic debate of our time.[14]

Jean Robert's method

In line with Ivan Illich's technological asceticism and to delve deeper into the understanding of space as a modern certainty, Jean Robert had to practice a discipline he called space agnosticism. He defined it as "an ascetical effort to disentangle from the aggregate of notions and perceptions foisted by the enclosure of all realities into the homogeneous space of science and management."[15] To explain space agnosticism, he begins with his personal story. He describes himself as a once-upon-a-time believer in the endemic modern superstition that considers space as "the non-transcendent beyond of all reality,"[16] a believer "in a strange natural religion that doesn't worship Ge, Ra, Helios, Tonatiuh or Ouranos, the earth, the sun or the sky, or any of the elements, but space itself, as if it were the primordial element."[17] In that time, he recalls, he became an architect, and while working as a draftsman in Amsterdam during 1963 and 1964, he witnessed the threat posed to the city by a

[11] Silja Samerski, "Tools for degrowth? Ivan Illich's critique of technology revisited," *Journal of Cleaner Production* 197, (2018): 1643, https://doi.org/10.1016/j.jclepro.2016.10.039.
[12] Samerski, "Tools for degrowth?" 1638.
[13] Samerski, "Tools for degrowth?" 1644.
[14] One of what we could call secondary objectives of this article is to try to bring him and his colleagues back to academic debates.
[15] Robert, "Place," 96.
[16] Robert, "Place," 96.
[17] Robert, "Place," 88.

political decision of the municipality to build roads and introduce vehicular traffic. His walks during the summer of 1964 left an imprint on him about the loss of something unique, the delight of the vibrant, smelly, and shadowy street life, and new questions assailed him: "What is there in architecture that destroys streets? What is there in space that destroys places?"[18]

Space agnosticism began as a personal experience, which later became a method. In more theoretical terms, Jean Robert describes this study method as a way of binding together again, as it was in the peripatetic axiom *Nihil est in intellectu quod non sit prius in sensu*,[19] the "concept" with the "percept", a method that, in his words, goes beyond modern phenomenology.

Here, again, it is important to foreground the method of technological ascesis as a path to space agnosticism. "From the 19th century onwards, the technique engendered, first, visual shows; then, other sensory simulacra of fleshless entities"[20] that Robert calls pseudo-percepts.[21] The entire industry that we today call the Media, in all its forms, runs by producing them. This is the main reason why, in his logic, technological asceticism has become so indispensable as a starting point for research. To do so, Jean Robert draws especially upon the ascetic of the gaze (custodia oculorum), a tradition widely commented on in some of Ivan Illich's last writings.[22] Illich's original ideas led Robert to amplify the research into the history of visual perception, in search of what he calls proto-ideas that gave rise to the modern invention of space. In this journey, he found the heuristically interesting idea that the invention of linear perspective in Renaissance painting, linked to the notion of the infinite, could be considered the true birth of space. He states:

> *According to (Albrecht) Koschorke, perspectivist space was engendered at the end of the fourteenth century by the introduction of the horizon into the womb of Renaissance*

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[18] Robert, "Place," 91.
[19] Nothing is in the intellect that was not first in the senses.
[20] Robert, "Prefacio," 30. Translation from Spanish is mine.
[21] Robert, "Prefacio," 26.
[22] See Ivan Illich, "Guarding the Eye in the Age of Show," *Res: Anthropology and Aesthetics*, no. 28 (1995): 47–61.

> *painting in Northern Italy. The pictorial "horizon" was no longer the crest of the mountains or the bottom of the heavenly vault but the abstract line of the points at which the viewer's eye would meet his feet, were he to reach them, an impossible feat. In other words, the horizon was now the mathematical construction of the infinite on a finite surface.*[23]

Without ascesis as a working method, it would have been impossible for Jean Robert to arrive at such heuristic insights. Before attempting to draw some arguments that could be philosophically and scientifically considered, it would be worthwhile, however, to delve a little deeper into the depths of the discoveries that underpin his agnosticism. I will do that following one of his main sources dealing with the philosophy of science.

Space-perception and the scientific revolution.

The idea of the horizon should be, without a doubt, of special interest for thinking about space. This is one of the main findings of Patrick Heelan, the first source mentioned by Jean Robert in his explanation of space agnosticism. Heelan states: "The perceptual object is never experienced as an isolated, unrelated entity: it always manifests itself within a horizon."[24] In his book *Space-Perception and the Philosophy of Scienc*e, Heelan sets the terms for developing a new scientific account of the world.

The Euclidean space dominance

Euclid (ca. 325–265 BC), states Robert, "did geometry without knowing space."[25] Speaking of Euclidean space is, therefore, an anachronism. Nonetheless, the term is necessary to understand a fundamental shift in the Renaissance that allowed for the emergence of the modern concept of space. Pictorial vision, from the Renaissance on, pretends to represent reality as it is, more than how it appears to the observer's eye. For achieving this, a perspective technique using Euclid's geometry was invented, giving rise to the

[23] Robert, "Place," 103.
[24] Patrick Heelan, *Space-Perception and the Philosophy of Science* (University of California Press, 1983), 8.
[25] Robert, "Place," 92.

Euclidean notion of space. It was a linear perspective, called "mathematical" or "artificial," that allowed the fixation of pictorial elements, such as points or segments of lines, on a flat surface.[26]

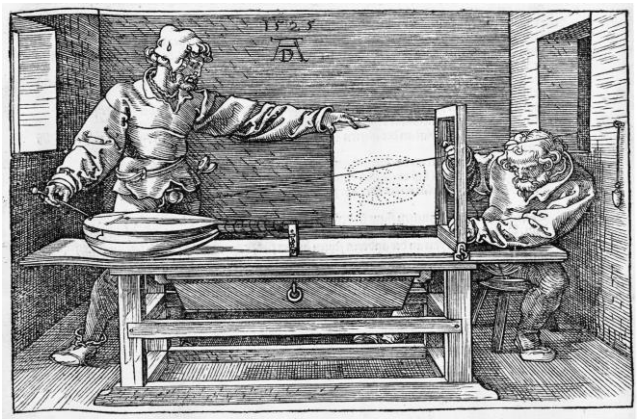

Figure 1: Albrecht Dürer, Unterweisung der Messung (1525)

This notion of Euclidean space is the background against which the 17th-century Scientific Revolution takes form. "For Newton and for most philosophers up to the time of Immanuel Kant, (...) geometry was conceived to be an idealization of (...) that aspect of crude, particularly visual, experience which dealt with relationships between certain kinds of physical items such as lines and figures *as constructed* (...) *in space*."[27] These are the objective elements of what Heelan calls the Cartesian-World Picture, and of what, for practical and synthetic purposes, I call Modernity.

The project of Modernity, the Cartesian-World, emerges given the need to give coherence to the explanation of nature after the Copernican discovery that the Earth is not the centre of the universe. To explain motion, Descartes relied on the atomistic philosophy of Democritus (fifth century B.C.) and designed a mechanistic understanding of the world and nature.[28] The idea of a neutral space by Descartes was originally formulated to support his theory of inertia as the explanatory cause of all movement in the

[26] Heelan, *Space-Perception*, 100–102.
[27] Heelan, *Space-Perception*, p. 40. Italics in the original.
[28] Thomas S. Kuhn, *The Structure of Scientific Revolutions* (University of Chicago Press, 1996).

universe (1645). Accordingly, each body in motion or at rest will continue in that state until an external force acts on it, colliding or pushing it, forcing it to change its state of movement or rest. Following this logic, Euclidean space became essential for explaining the constant and linear motion of the smallest particles. This theory was the main support for Newton's second law, or fundamental law of dynamics (1687). Newton even worked with Euclidean space as an absolute and characterised it as God's sensorium to deny the notion of emptiness, which it was obviously charged with.

As noted, Kant assumed space to be a universal a priori or pure intuition of thought, on which he built the entire conceptual edifice of modern philosophy. He was so persuaded of the apodicticity of Newtonian physics that he proposed as a self-evident truth that the space of empirical objects and intuitive experience is Euclidean. Interestingly, however, during the 20th century, Euclidean space became non-apodictic; it was strongly contested and considered not necessarily true by the Theory of Relativity and Quantum mechanics. For this reason, those of us living in the 21st century face a similar situation to that of those who lived in the 17th century. The mathematical calculus developed by Copernicus in the 16th century forced philosophers and scientists to provide a new account of physics and nature. In the 21st century, we are called to do the same.

Nature and hyperbolic space

As with the fish wondering what water is, the problem with space is that there is no possibility to think about it from outside its borders. This is why Patrick Heelan's concern with what he calls the "horizons of visual space" is so useful. "In any individual act of perception, the perceived object has an outer horizon, or boundary, which separates it from the background against which it appears."[29] But, since the horizon is not itself a visual object —it does not have an outer visual horizon to contrast it with—, "the term 'horizon of visual space' will refer then to the spatial horizon of all horizons of

[29] Heelan, *Space-Perception*, 8.

visual objects, or the invariant geometrical structures exhibited by every visual profile of every visual object."[30]

In the line of Husserl, Heidegger, and Merleau-Ponty, Heelan develops a phenomenological and hermeneutical non-Cartesian philosophy of perception. He is concerned with the odd fact that many perceptual events are rejected as distorted or illusory merely because "they *do not obey* those scientific laws against which they would stand in evidence."[31] He delves deeper, however, into a subject that, in his predecessors' work, began only as an outline: the central role that technology plays in perception. He notices that, contrary to the modern axiom of space, our unaided natural vision of landscapes is not Euclidean but hyperbolic, that is, not inhabited by a constant geometry of straight lines but by curves. Relying on several experimental works in the last century, he states that "it was demonstrated that, when normal observers are presented with a configuration of points of light dispersed in an otherwise dark background, they tend to construe the spatial organisation of the configuration in a way not consistent with Euclidean geometry."[32]

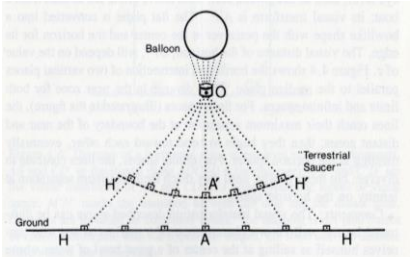

Figure 4.5: The "terrestrial saucer": the flat earth (*HAH*) as seen from a balloon appears to be shaped like a saucer (*H'A'H'*).

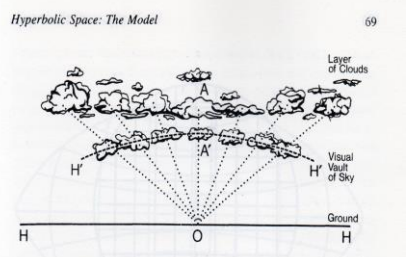

Figure 4.6: Visual vault of the heavens (*H'A'H'*) as it would appear if there were a horizontal layer of clouds (*HAH*) in the sky.

Figure 2. Graphics by Patrick Heelan illustrating hyperbolic landscape vision.

If the naked eye sees space in a hyperbolic fashion, then Euclidean space, as Heelan says, should be a scientific artifact, and our everyday world an artifact of scientific imagination. Since we

[30] Heelan, *Space-Perception*, 11.
[31] Heelan, *Space-Perception*, 2. The bold text is mine.
[32] Heelan, *Space-Perception*, 46.

have come to believe in Newton's laws as the laws of nature, our everyday world, as modern humans, has basically a Euclidean normative structure. This is constantly exacerbated by technological developments always running ahead, not only causing an irreconcilable disconnection between humanity and nature, but also between rich and poor societies, as lucidly observed by Heelan:

> *The readable technologies necessary to convert primitive terms into scientific terms are ready to hand in our culture. That such technologies are ready to hand, particularly, but not exclusively, to the culturally advanced levels of our society, makes plausible and, to some extent, inevitable the substitution of World horizons that depend on technology for those that do not. Indeed, Western societies seem to be driven by a deliberate teleology to replace the primitive horizons of perception with new horizons accessible only through technology, thereby replacing common naturalistic descriptive terms at a primitive level in everyday language with a new repertoire of scientific terms for more cultured users of everyday language.*[33]

Jean Robert follows Heelan in his thesis that "space is (in fact) a product of technological mediation and visual education."[34] It is also for this reason that he advocates technological asceticism, since it is only by preventing the feet from being numbed by motorised vehicles or the gaze trapped by the TV that "the practice of agnosticism among the certainties of the space age" is possible.

The big enclosure

In his article, Jean Robert poses three questions: 1) How did space become a crucial element for developing modern management in a technological society? 2) How has that belief influenced the much older notion of place? and 3) How does the modern notion of space impact the ethical and political perception of the place as the atmosphere that people create when they live together? This last

[33] Heelan, *Space-Perception*, 247.
[34] Robert, "Place," 96.

question is perhaps the most pressing in a world where we seem to be dragged by the exercise of power without ethics. But although it may not seem obvious, questions 1 and 3 are closely related. Our contemporaries tend to view technology and ethics as separate spheres of knowledge, in contrast to how Robert considers them in his text and how Ivan Illich does in all his work.

For Robert, the enclosure of all beings, of being itself, within space, the historical event in which space came to be conceived as an a priori, is the prelude for specialised and managed spaces "where children, the sick, and the mad are put to be among themselves."[35] When he states that space "became the crate of the world, the supreme enclosure,"[36] is implicitly pointing to Michel Foucault's idea about the enclosure of docile bodies and societies of control.[37] But he goes further: "When I think of enclosure, what comes to mind is the enclosure of pastures that turned commons into private space." [38] He refers to the 18th and 19th-century enclosure movement in the British countryside, "which has been dubbed a 'war against subsistence,' the 'tragedy of the commons,' the 'demise of people's moral economy,' or 'the social construction of scarcity,'" [39] and which finally made capitalism and industrialisation materially possible.

The process described by Heelan, in which the picture of nature with unaided senses is replaced by a world where common descriptive norms refer to Euclidean space, led to scientific and technological interventions that reshaped the world as a "carpentered environment." "Such a World is, in a special sense, artificial." [40] The "carpentered environment" to which Heeland refers is precisely what Robert means by "the big enclosure:" pre-planned and engineered structures that permanently require governmental management. Heelan speaks of "engineered forms of

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[35] Robert, "Place," 104.
[36] Robert, "Place," 104.
[37] Michel Foucault, *Discipline and Punish: The Birth of the Prison* (New York: Pantheon Books, 1977). Since it was also considered by Jean Robert in other places of his work, we could also consider Gilles Deleuze's notions of *enclosure*.
[38] Robert, "Place," 104.
[39] Robert, "Place," 104.
[40] Heelan, *Space-Perception*, 248. Italics in the original.

fixed markers, such as buildings, equally spaced lampposts, and roads of constant width."[41] Robert speaks of "a world of highways, airports, educational precincts, and penitentiary wards."[42] In both cases, what stands out is that the visual phenomenon in our everyday world is Euclidean.

When Jean Robert speaks of enclosure, he is not referring, in Foucauldian terms, only to the modern institutions of enclosure for those who are considered the weak. He is also referring to the engineered sets that we normally consider to be in the open. The idea of a carpentered environment describes a world in which visual phenomena of everyday life are Euclidean.[43] It is the environment of the big, modern cities. Heelan describes it in the following way:

> *Works of engineering, such as the rectilinear facade of a large apartment building or the shapes and sizes of cars in motion, must be included in the 'texts' that the carpentered environment provides; from their paradigmatic Euclidean geometric forms is 'read' the fact that things of different sizes or in different locations can be similar, a property characteristic of Euclidean space.*[44]

For Jean Robert, a priori space is, in a metaphorical sense, a kind of endemic disease, but a strange one because "those who are infected by it in turn affect reality, render it shallow, cause it to dwindle and fade, make it uninhabitable for themselves and for others."[45] But above all, and perhaps the worst setback, the malady seems to provoke "that things and people lose their relatedness to each other and fall apart."[46]

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[41] Heelan, *Space-Perception*, 251.
[42] Robert, "Place," 105.
[43] From the very beginning of his article, Jean Robert positions himself at the opposite extreme from that of the modernist architect Le Corbusier. One only needs to look at the works and designs of this utopian urban planner, to whom the "invention" of modern life is attributed, to get an idea of what a completely engineered world would look like.
[44] Heelan, *Space-Perception*, 251.
[45] Robert, "Place," 105.
[46] Robert, "Place," 105.

A plea for a new science

The Theory of Relativity and Quantum mechanics, even when they are not mentioned at all in Jean Robert's article, are necessarily in the background. Both are scientific discoveries that, in the 20th century, profoundly challenged Newton's laws of physics, forcing a rethinking of space, time, and matter. With them, especially with the first one, non-Euclidean geometries in relation to space were successfully applied and thus accepted as valid. They are necessarily in the background because both Jean Robert and Ivan Illich based their work on the philosophy of science of Gaston Bachelard, who saw his task as searching for a philosophical characterisation of contemporary thought that should differ from the one appropriate to classical Newtonian science, in the wake of those discoveries.

A non-Euclidean representation of space leads, in Bachelard's terms, to a non-Cartesian epistemology. Mary Tiles, writing about Bachelard's philosophy of science, writes the following: "The acceptance and successful application of non-Euclidean geometries was seen by many as putting a final nail in the coffin of rationalist paradigms of knowledge, by showing that even in geometry there is no possibility of synthetic a priori knowledge."[47] In this regard, seriously questioning the reality of space seeks to provoke the epistemic break we need for escaping our still confining modern certainties. If we accept that the Theory of Relativity constitutes a cognitive advance, as Bachelard does, this requires us "to recognize that what had for so long been found to be self-evidently correct, Euclidean geometry, is not thereby objectively guaranteed," [48] and thus scientific knowledge cannot find a foundation in a priori intuition, or in a so-called clear and distinct perception.

Here is where the big debates around subjectivity and objectivity, and the way in which the subject reaches knowledge, arise.[49] Ivan Illich and Jean Robert respond to it in a very particular

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[47] Mary Tiles, *Bachelard: Science and Objectivity* (Cambridge University Press, 1984), 222.

[48] Tiles, *Bachelard*, 31.

[49] Mainly, from here on, my paper can only turn out to be evocative. I am nearing the end, and I don't have much room left to elaborate. Maybe, for now, it is just

way, by incarnating in their own bodies, by fully sensing the place in which they happen to be, the real source not only of their experience but also of what they can truly know.

From "prophecy" to science

In 2002, one year after Jean Robert presented "Place in the Space Age," the book *The Challenges of Ivan Illich*[50] was published. It was a collective reflection by Illich's friends and collaborators. In the opening chapter, Lee Hoinacki, one of Illich's closest friends, sets the tone for both the rest of the book's chapters and for the approaches to the Viennese thinker since his death in December of that same year. With their friend's personal charisma strongly present in their reflections, those who collaborated with him have been very careful in remaining loyal to his ideas and to what they interpreted as his intentions. Hoinacki states that people have problems approaching Illich because they look in the wrong direction. It is, in his view, not by the quest for objectivity that we will understand him, but mainly by the subjective approach in relation to the person of the author, rather than his work. He presents Illich as a witness, in the style of Primo Levi, who wrote and testified about his experiences as a victim in Auschwitz. In the same sense, Illich would be bearing witness to "the overarching evil of recent Western history."[51]

This phenomenon surrounding Illich has been, of course, due not only to his personal charisma but also to the religious story behind him. As a young man, Ivan Illich worked as a Catholic priest. In fact, one of the few wide criticisms of his work, in the book *The*

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worth mentioning that, as well as Bachelard, Patrick Heelan discusses modern subjectivity widely. For Bachelard, Cartesian philosophy necessarily stems from Cartesian science. Tiles, *Bachelard*, 30. For Heelan, one of the major consequences of this is that, since classic modern science had no place among the objects of its inquiry for the mind, it was unable to account for the phenomenon of human persons. Heelan, *Space-Perception*, 257.

[50] Lee Hoinacki and Carl Mitcham, eds., *The Challenges of Ivan Illich: A Collective Reflection* (State University of New York Press, 2002).

[51] Lee Hoinacki, "Reading Ivan Illich" in *The Challenges of Ivan Illich : A Collective Reflection*, ed. Lee Hoinacki and Carl Mitcham (State University of New York Press, 2002), 2.

Prophet of Cuernavaca: Ivan Illich and the Crisis of the West,[52] dwells precisely in the dramatic tensions between Illich and the Church. Hoinacki's writing, for its part, clearly demonstrates religious admiration, or at least religious influence. The account of multiple personalised experiences around Illich's figure has deeply influenced how people have approached his thinking.[53] Most people who discuss his ideas do so in a way that appears to follow his personal stances, rather than in a philosophically rigorous study of his thoughts. This overly personalised approach is one of the main reasons his work has not been widely discussed or at least read and seriously considered in academic circles.

But the conditions Ivan Illich and Jean Robert faced at the end of the 20th and beginning of the 21st century are not the same as those we are already facing in the second quarter of the 21st century. The main thesis I want to propose for further exploration, inspired by Bachelard's philosophy of science, is that after space agnosticism as an epistemological rupture challenging Modernity, we should now favor the construction of a proper philosophical account for our world and our relationship with nature. A non-Cartesian account of objective knowledge is of main importance for that purpose. Objectivity, more than a condition for science, is the vocation of both philosophers and scientists.[54] Amid our crisis of credibility in the broadest sense, we are called to understand that the central focus of scientific work is neither the object nor the subject,

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[52] Todd Hartch, *The Prophet of Cuernavaca: Ivan Illich and the Crisis of the West,* (Oxford Academic, 2014), https://doi.org/10.1093/acprof:oso/9780190204563.001.0001

[53] For more examples and discussions about the topic, see: https://thinkingwithivanillich.net/

[54] For Bachelard, objectivity in science is not a condition but a vocation. "Knowledge has to become objective. Not only are there no starting points, no epistemological foundations for natural science, there are no already fully objective views, right or wrong, about how the world is." Tiles, *Bachelard,* 40. Bachelard provides an alternative account of objectivity of science in contrast to Popperian realism, which he sometimes called "chosiste" for being grounded in the states and intrinsic qualities of independently existing objects. Science progresses *towards* objectivity as a goal that "can structure a cognitive field and thereby introduce an order which overarches particular theories within it without requiring any absolute yardstick for the imposition of that order." Tiles, *Bachelard*, 47.

but the horizon, the spatial horizon of all horizons; "the invariant geometrical structures exhibited by every visual profile of every visual object."[55]

Trust between us can only grow if we become more credible. For that purpose, Ivan Illich and Jean Robert should be brought back from the academic peripheries to which they moved in the 1980s. This article is a double call, for academics to read Illich and Robert on the one hand, and for those who read Illich to walk towards objectivity on the other.

Conclusion

Since I cannot provide further explanations in this article, what remains for us, after all this, is to call for further scientific and philosophical research based on a better understanding of what its scope and purpose should be. I hope to have at least achieved the objective of providing good reasons for bringing Ivan Illich and Jean Robert back from the academic peripheries and, especially, for considering Jean Robert's space agnosticism as a challenge to Modernity. After Robert's and Illich's philosophical journey, a new critical theory of Modernity may be on the verge of development. I think Humberto Beck is right in comparing what he calls the Cuernavaca School with the Frankfurt School of Critical Theory.[56] But perhaps what remains to be emphasised is that, amid a crisis as profound as the one the West is going through, there is too much work to do to find our way out of what seems to be a deep civilisational predicament.

If Jean Robert is right and, due to the demise of Cartesian space, Modernity is reaching its end, we are faced with the heavy and urgent task of building a new scientific account before war, rivalry, or "natural" catastrophe disrupts and threatens the collapse of civilisation. Perhaps not only technological asceticism, but also Heelan's representation of Euclidean space as a scientific artifact will help us grasp what we should leave behind. Even more, the understanding of hyperbolic space as what is, in fact, given to our unaided perception, provides us, so to speak, a way to go. We are,

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[55] *Supra*, p. 9.
[56] Beck, "Ivan Illich," 58–61.

as philosophers and scientists, carrying a heavy burden, but we must continue looking at the horizon and searching for a better explanation of our environment, one that would provide us with grounds for better coexistence between humans and within nature.

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