

Unfolding the Potentials of the Oblique Function Theory in Educating the Cosmopolitan Architect

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The paper unfolds the potentials of the Oblique Function Theory, founded by architect Claude Parent and urban theorist/philosopher Paul Virilio under Architecture Principe group, in educating the cosmopolitan architect. It examines how the Oblique Function Theory engages with the architectural problems of cosmopolitan dynamics by extrapolating a new architectural language around tenets of habitable circulation, flexibility, continuity, free movement, openness, and adaptability. By emphasizing the importance of architectural space-making in pedagogy, the paper questions the validity of the Oblique Function Theory in creating a productive educational environment for cosmopolitan citizens. Doing so first reviews the literature on educative spaces, understanding the potential of how designing architectural spaces can contribute to the quality of cosmopolitan education. Then, hypothesizing that the cosmopolitan expectations warrant a contemporary architectural space, it argues that Euclidean spaces may fail to integrate humans and the environment, hindering the cognitive skills necessary for cosmopolitanism. Furthermore, it explores the Oblique Function Theory's rejection of horizontal and vertical architecture to achieve more versatile, adaptable, and responsive architecture. To better clarify how the proposed tenets of the theory relate to the pedagogy of 21st-century cosmopolitanism, it analyzes Two Libraries at Jussieu by OMA and architect Rem Koolhaas, Rolex Learning Center by SANAA, and Roy and Diana Vagelos Education Center by Diller Scofidio +Renfro, that integrates the oblique architecture with educational purposes. Could the Oblique Function Theory contribute to the education of cosmopolitan architects by transforming architectural educational spaces, would it be enough to engage with whole issues comprehensively, and what it takes for the theory to ensure a constantly effective pedagogical medium, are among the questions the paper aspires to answer.

INTRODUCTION

What does being a cosmopolitan connote for architecture? How can we redefine architecture under cosmopolitanism? Should architectural discourse and pedagogy shift their paradigm or

rely on the existing methods and traditional trajectories to educate cosmopolitan architects? Cosmopolitanism comes from the word *kosmopolites*, meaning 'to be a citizen of the world' according to Diogenes of Sinope. In the contemporary context, being a cosmopolitan pertains to being a sophisticated and multifaceted worldly citizen, attaining a global identity instead of a local one. According to architectural educator Massimo Santanicchia, 'architects as carers of the world act as cosmopolitan citizens.'¹ Thus, the global developments of the 21st century defined by architects Sally Stone and Laura Sanderson, such as 'rapidly advancing digital practices, evolving expectations, the climate emergency,' and many others, are the foremost concerns of cosmopolitan architecture.² In that sense, architectural education models and pedagogy warrant reinvigoration and reformulation to address cosmopolitan conditions. Academician Ashraf Salama heeds the need for a paradigm shift in architectural pedagogy from a 'static domain knowledge traditional approach' to a more 'updated, integrated, integrative, active and flexible response' that effectively engages with the social, economic, and environmental problems.³ The paper, responding to such transformations, examines the Oblique Function Theory, founded by architect Claude Parent and urban theorist/philosopher Paul Virilio under Architecture Principe group, as a novel methodology of space-making to moot whether its tenets could provide openness, flexibility, and dynamism required.⁴ In order to examine the potency of spatial settings in educating the cosmopolitan architect, the paper aspires to demonstrate how the theory would foster an adaptive and responsive space for the 21st century by replacing Euclidean approaches with oblique ones. It seeks to re-evaluate the fundamentals of the theory; polyvalence spatiality, habitable circulation, free movement, open activity, and disorientation under an educational perspective. For this case, it perustrates contemporary oblique educational projects; Two Libraries at Jussieu by OMA and architect Rem Koolhaas, Rolex Learning Center by SANAA, and Roy and Diana Vagelos Education Center by Diller Scofidio +Renfro.

COSMOPOLITAN ARCHITECTURAL SPACE AND EDUCATION

Architectural education is contingent on the built space and spatial qualities. Academician Neil Gislason, making upon the

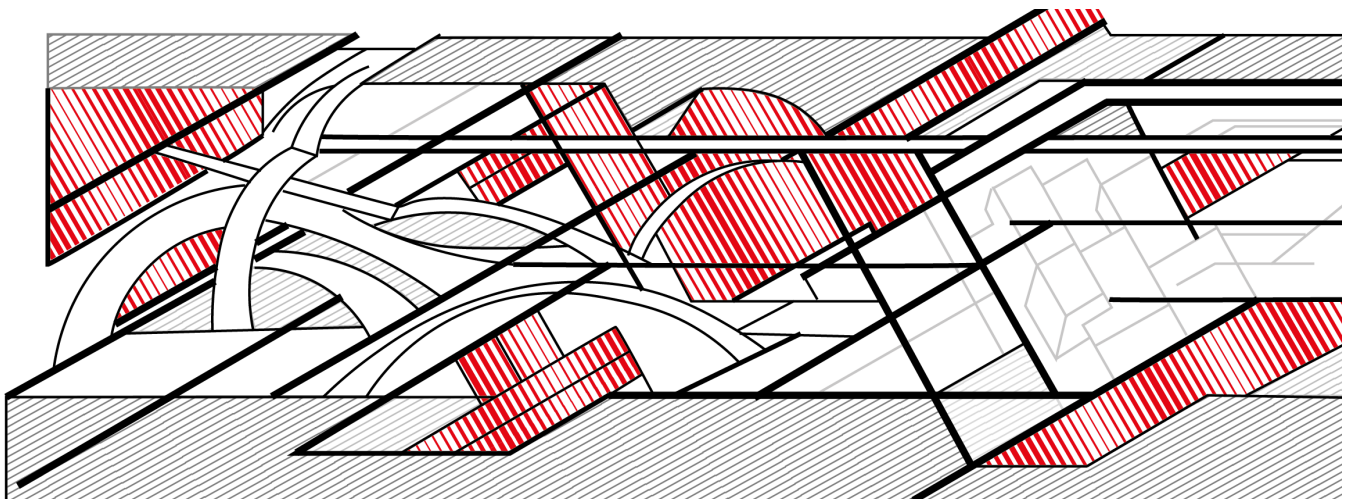


Figure 1. An abstract diagram of Claude Parent's Urban Incision project, black lines show the oblique network, while red enclosed spaces and diagonal hatch earth. Created by authors.

educative spaces of philosopher John Dewey, claims that '[spaces] can serve as effective teachers, but they can also impede the educational process if they are inadequate.'⁵ The bereft of apprehension of cosmopolitan context causes insufficiency. To avoid this, one should further delineate cosmopolitanism and its influence on architectural pedagogical space, highlighting how the space would relate to the nascent cosmopolitan expectations and resulting pedagogical concerns. By reinterpreting Lefebvre's spatial triad, architect Jos Boys illuminates that the design of 'learning spaces' necessitates a multilayered approach, touching upon not just space per se but how it reciprocally engages with multiple faculties.⁶ In a cosmopolitan context, this kind of approach is even more salient. Cosmopolitan architecture ineluctably needs to grasp a flexible, adaptive, resilient, and imaginative approach to ensure such an environment.⁷ In parallel, architectural space should promote these traits as well. To become a productive ground for education, the space should correlate with cosmopolitanism's immanent qualities; cognition, consciousness, action, awareness, dynamism, and flexibility, which aligns with Boys' multilayered framework for learning spaces. It should embark upon them, mediate them with architectural discourse and theory, and engender a way of space-making that would earnestly seek to usher the education of a cosmopolitan architect. Unfortunately, the conventional Euclidean spaces are remarkably incapable of acknowledging these since they instantiate acutely but obviously the obverse of cosmopolitan conditions; inertness, passiveness, and stagnation.

In parallel to pedagogical alterations and shifts, architecture should transform its Cartesian orthodoxy, and instigate a new cosmopolitan spatiality, prompting users to be vigilant and receptive to the contemporary world by triggering them to be active in limbo. Despite the digitalization of architecture and the transformation of space at the start of the 1990s, the dominant architectural techniques for space-making are precisely akin to the past. Although the building's envelope breaks the

restricting directionality in many examples, architectural historian Barry Higman implies that through architectural history, 'the fundamental plane -the floor- remains defiantly flat.'⁸ However, since the floor is the main building component that accommodates all the functions, the effect of Cartesian prevails; nevertheless, the carapace's morphological deviation from the traditional. Neuroscientist Andy Clark demystifies the cognitive relationship between human-environment. According to his thought, the human brain is an adaptive organism who is potential is emerged and is fully cultivated with the engagement of the external environment since the brain is embodied with the body and environment to build biological cognition.⁹ In architectural terms, architect Lars Spuybroek comes with the 'Motor Geometry' concept, proposing that the built environment is the prosthesis of the body because of the proprioception, directly affecting the individual's perception.¹⁰ However, for him, somebody could only achieve this with topological extensions that reinvent whole architecture, including floors that resonate with movements rather than Cartesian order that separates the mind and body, forcing them to act discretely.¹¹ With the Oblique Function Theory, Parent and Virilio lay out the roots for this topological thought, aspiring to redefine the amalgamation between human-environment. While doing so, they introduce various concepts derived from the contemporary cosmopolitan condition, which one may avail for a novel pedagogical framework.

THE OBLIQUE FUNCTION THEORY

The Oblique Function Theory by the eminent figures architect Claude Parent and urban theorist/philosopher Paul Virilio hold influential conceptions and thorough contemplations on how the cosmopolitan educational architecture of the rapidly changing and increasingly complex world could be established. Exhaustively formulated between 1963-1969, under the group of Architecture Principe and eponymous manifestation magazine, the theory postulates how urban designers and architects may



Figure 2. Claude Parent in 1980s, photo taken by his daughter; Chloé Parent. Source: Wikimedia Commons, Claude Parent Archives (https://commons.wikimedia.org/wiki/File:Claude_Parent_1980s_%C2%A9_Chlo%C3%A9_Parent.jpg)

practice a 'third urban order' conceptualized with oblique planes against horizontal and vertical architectures.¹² 'Gestalt theory - the psychology of form and the phenomenology of perception,' as Virilio proclaims, establishes the theoretical foundation of the work.¹³ With the theory, Parent and Virilio aim to reinvent architectural vocabulary by dissolving walls, columns, roofs, and other building components within inclined planes.¹⁴ While setting that, instead of taking direct references from the epoch's architectural approaches and contexts, the duo denotes and engages with the contemporary dynamics of human life as the springboard for their ideas. Therefore, according to them, urban faculties' interweaved social and political networks are much more significant than historical and cultural aspects. As Parent foregrounds, trajectories, routes, and displacements shape our cities; thus, the architecture should be driven by these.¹⁵ With this in mind, Parent and Virilio assure that the Oblique Function Theory revolves around 'a state of motion, perpetual movement, and imbalance,' according to art historian Larry Busbea.¹⁶

The main element of the Oblique Function Theory is the inclined plane. Parent and Virilio experimented and utilized the plane throughout their publications, drawings, exhibitions, and built/unbuilt projects. Even though it seems to be a bold formal proposal, since it is genuinely an architectural way of approaching things, it allows lots of architectural interpolations and extrapolations. There are some crucial concepts that Parent,

Virilio, and others working on the Oblique Function Theory coin in that somebody can revisit in a search for a cosmopolitan didactic architectural framework; polyvalence spatiality, free movement and open activity, habitable circulation, and disorientation. Firstly, architectural theorist Esen Gökçe Özdamar claims that the Oblique Function Theory has a polyvalence spatiality.¹⁷ The founder of the concept, architect Herman Hertzberger describes it as 'a form that can be put to different uses without having to undergo changes itself so that minimal flexibility can still produce an optimal solution,' believing that against uncertainties, somebody should adopt such an approach.¹⁸ Through inclined variations and conceiving every direction possible with securing flexibility, oblique settings by Parent and Virilio go in line with Hertzberger, especially in Parent's own house, Villa Parent, 1974, define not which functions will take place but how people would move through the space to carry them out. Furthermore, the Oblique Function Theory promotes free movement and open-ended activity. With these, architect Igor Siddiqui suggests that it 'mirrors the dynamic nature of today's society.'¹⁹ According to architectural theorist Lee Stickells, the oblique space provides 'a non-linear circuitous occupation of space that promotes productive, informal interactions and events.'²⁰ Moreover, the oblique establishes a habitable circulation by ensuring free circulatory surfaces with the allowance of multifarious flows through inclined planes. It breaks the clear-cut distinctions between the urban and the domestic Cartesians, the vertical and the horizontal, to radically expand usable surfaces.²¹ Since everything in the world transformed -from point to route, element into energy- Parent and Virilio advocate that 'it is no longer feasible to separate habitation from circulation,' succumbing to the fixity that arose from the separations.²² Lastly, according to Parent and Virilio, the oblique disorients anthropometric standards to 'accord with the new plane of human consciousness.'²³ The goal is to enact a constant epiphany against uncertainties and preempting indifference to architecture.

According to Parent, The Oblique Function Theory extols 'a state of mind, which is characterized initially by receptiveness, then by participation, and ultimately by a sense of belonging.'²⁴ Siddiqui promulgates that this 'not only describes architecture as a space of inhabitation but also considers space as a didactic tool for architecture, 'a tool that could be dissected to address the contemporary situation.'²⁵ The cosmopolitan condition has introduced many new discrete urban segments of administration, architecture, engineering, and telecommunication that must compromise with each other in the urban and architectural environment. In pedagogical terms, the cosmopolitan reflections entail the need for a multi-disciplinarity way of education, creating a tapestry or a mosaic that enables diversification and manifoldness. However, this could also lead to 'a melting pot,' ceasing the quality of the segments within the whole.²⁶ Cosmopolitan architecture, within that circumstance, should acquire a topological approach allowing interaction and integration heterogeneously between distinguished yet



Figure 3. Rolex Learning Center by SANAA, photo taken by Ricardo Martins.

Source: Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Rolex_Learning_center.jpg)

relatable counterparts. Encircling around concepts of kinesthetic and proprioceptive perception, meta-stability, disequilibrium, gravitational awareness, continuity, fluidity, dynamism, disorientation, flexibility, activation, habitable circulation, and potentialism, the Oblique Function Theory elicits such a theoretical and practical framework, establishing a springboard for its successors; Deconstructivism, Folding in Architecture, and Parametricism. Topological thinking and architecture warp 'social, spatial, structural, and aesthetic functions into one continuum,' 'forming a connecting system between edifice, dweller, and environments,' according to architectural theorists Yannis Zavoleas and Mark Taylor.²⁷

CONTEMPORARY OBLIQUE PEDAGOGY AND SPACE

In contemporary architecture, many buildings materialize the tropes of the Oblique Function Theory to address the cosmopolitan necessities. Polyvalence spatiality, free movement, open activity, habitable circulation, and disorientation engender versatile contemporary learning spaces and typologies. However, since any research has yet to unravel the correlation between the Oblique Function Theory and these educational spaces, the oblique concepts with ostensible connections to cosmopolitan architecture are latent and ineffective. First and foremost, architect Rem Koolhaas and his office OMA experimented with

the oblique in a competition project, Two Libraries at Jussieu, 1992, organized in Paris. The team brought the urban space and infrastructure into the building by extending the nearby boulevard.²⁸ Architecture critic Andreas Ruby suggests that this continuity entails the 'trans-programming of the building into an incubator of public space.'²⁹ The project's 'architectural program' is ambiguous because 'programming the surface' entails 'a playful set of endless variations,' according to landscape architect Daniel Jauslin.³⁰ By embracing a topological standpoint, Koolhaas achieves a habitable circulation and polyvalence spatiality that gathers heterogeneous activities and movements in one congruent continuum. Although the created space is not explicitly assigned for cosmopolitan architects' education, since the consideration is the cosmopolitan citizens, the building tries to conceive an educational and didactic space that allows maximum interaction and integration with utmost flexibility. Santanicchia's some of the definitive traits for cosmopolitan citizen-architects are collaboration, cooperation, connectedness, and communication, in which Two Libraries at Jussieu excel.³¹

Another crucial project classified under contemporary oblique pedagogy and space is Rolex Learning Center by SANAA in Lausanne, built for EPFL. Completed in 2010, according to

Siddiqui, the project reflects ‘the tenets of the oblique by demonstrating free movement and open-ended activity.’³² With its undulating and continuous floor surface, the building offers inclined variations that may provide a distinguished function for each occasion without further interventions. SANAA implies that they design the building as a single space.³³ Despite being conceived as a single space, Jauslin elucidates the building’s composition with the four primary formal layers; ground form, spatial form, image form, and program form.³⁴ Jauslin clarifies these layers as ‘landscape design strategies.’³⁵ However, they also have repercussions in responding to cosmopolitanism and its educational spaces. The designed learning space deviates from the traditional architectural ones, smoothly embodying ‘edifice, dweller, and environment’ to amplify the interaction and integration. By manifestation of such a triad, Rolex Learning Center instantiates the dynamic and continuous feedback loop that unfolds itself with the individual’s movement through the building. In order to challenge inertness, passivity, and reticency, the built space triggers activeness, vibrancy, and mobility. Consequentially, it fosters a mediated medium, increased engagement, and collaboration zones between sundry strands; students, teachers, and citizens.

Lastly, Diller Scofidio +Renfro’s Roy and Diana Vagelos Education Center in New York uses the Oblique Function Theory’s pedagogical reflections and fundamental doctrines to create a learning-built environment. Inaugurated in 2016, the building is dedicated to Columbia University Medical Center. Diller+Scofidio describes the 14-story glass tower as ‘Study Cascade,’ ‘extending the campus activity along the south elevation of the building with a diverse network of social and study spaces for informal learning and collaboration.’³⁶ Like the architectural logic behind Jussieu Libraries, Vagelos Education Center aims to stack different functions along a topological trajectory, fostering heterogeneity and flexibility for cosmopolitan users. Rather than embracing the vertical composition of nearby buildings that Parent criticizes as ‘microghettos’ that isolate the inhabitant from the living ground, the center aspires to amalgamate the urban plane with the architectural program.³⁷ This waters down skyscrapers’ disruptive attitude, creating a more engaged, collaborative, and productive nexus. Diller Scofidio +Renfro affiliates the building to FREESPACE, the overarching theme extracted from Yvonne Farrell’s and Shelley McNamara’s eponymous manifesto for Venice Biennale 2018.³⁸ In the manifesto, Farrell and McNamara state that they intend to ‘reveal the diversity, specificity, and continuity in architecture based on people, place, time, history, to sustain the culture and relevance of architecture on this dynamic planet.’³⁹ Considering these, Diller Scofidio +Renfro’s Vagelos Education Center renders how the cosmopolitan architecture and educational space should be in the 21st century.

These contemporary oblique-influenced projects evince that by being flexible, open-ended, active, and unitary, the oblique provides the execution of eligible conditions for cosmopolitan architectural pedagogy, foregrounding spaces for the education

of conscious individuals with the reciprocal reification of the oblique principles, resulting in a complete embodiment of space and society. Nevertheless, there are many ongoing discussions and debates on the relevancy of architectural space in pedagogy, questioning whether designing flexible learning spaces would be enough to educate cosmopolitan citizens and architects. For better apprehension, Boys asks the question: ‘But if flexibility is actually about enabling different modes of teaching and learning, then surely this is an issue of changing educational models rather than spaces?’⁴⁰ For her, learning spaces can support ‘the range of existing and potential teaching and learning modes in any particular situation’ by allowing flexibility and adaptability.⁴¹ Thus, as an auxiliary, the educational spaces are preponderant for potent education. However, they are not the only concern but one of the parameters to consider. Eventually, the Oblique Function Theory should be distinct from a comprehensive pedagogical framework because of its formal and spatial limits. It can only engage with some cosmopolitan architecture education needs, resolving specific problems and proposing solutions for only the spaces of this education. With inclined planes, through formal reifications, it defines a cosmopolitan framework by architectural tools. One may extrapolate it to outline a novel architectural pedagogy with the tenets it asserts to contemporary architecture and cosmopolitan society but not utilize it solely.

CONCLUSION

Many examples in contemporary architecture engage with the cosmopolitan pedagogy and condition by immanently referring to the Oblique Function Theory. By utilizing multiple directions with inclined planes rather than restricted with Euclidean horizontal and vertical ones, Two Libraries at Jussieu by OMA and Rem Koolhaas, Rolex Learning Center by SANAA, and Roy and Diana Vagelos Education Center by Diller Scofidio +Renfro uniquely ensure polyvalence spatiality, free movement, open activity, habitable circulation, and disorientation. These, derived from the Oblique Function Theory, offer flexibility, adaptability, dynamism, activeness, connectedness, collaboration, communication, and responsiveness, to resolve the cosmopolitan life’s expectations. As many academicians studying architectural pedagogy indicated, cosmopolitanism alters the existing conditions by introducing uncertainty and indeterminacy, necessitating a mutual and perpetual dynamic transformation in education and architecture. Architect Claude Parent and urban theorist/philosopher Paul Virilio sought to respond to this through a novel architectural approach, rejecting the conventional space-making methods and dissenting them as not corresponding to the new dynamism posed by the cosmopolitan context. However, although their proposal brought valuable, vital, and fruitful concepts to architecture and pedagogy since their discourse relied heavily on architectural forms, their extrapolations were confined within the architecture discipline, contradicting what cosmopolitan condition tries to accomplish. No matter how architecture may endeavour, multidisciplinary is inevitable within and against a cosmopolitan world defined with galore faculties,

agencies, and strands. The plurality means architecture and its pedagogy should be open to mediation, collaboration, and communication with other disciplines. Indeed, this emphasizes the urgent need for a redefinition of architectural design and pedagogical process with the inclusion of others. The reason why the Oblique Function Theory per se is feeble comes from the very fact that it is not an inclusive output of cosmopolitan understanding but rather a theory that reacts to the condition it established. In that sense, it only incorporates solutions from an architectural perspective, either omitting or slightly including sociology, psychology, engineering, and many more. No field, discipline, theory, or practice can become the panacea in such a complex, multifaceted, and cosmopolitan world. Being cognizant of this would engender a comprehensive curriculum for educating the cosmopolitan architect. Then, architectural theories like the Oblique Function Theory become more meaningful, fathomable, and effective.

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