Kinestetička imaginacija u arhitekturi: projektiranje i reprezentacija prostora

●

Kinesthetic Imagination in Architecture: Design and Representation of Space

ARHITEKTURA, POKRET, MEDIJI | ARCHITECTURE, MOVEMENT, MEDIA

SAŽETAK

Povijesti arhitekture odavno su prepoznale vitalnu ulogu koncepata, strategija i principa razmijenjenih između arhitekture i filma, što je rekonfiguriralo njihove sustave znanja i obogatilo taj odnos do danas. Ipak, film se uglavnom upotrebljavao kao instrument naracije i reprezentacije u arhitekturi, tek rijetko angažiran u ispitivanju utjecaja na način na koji razumijevamo, razmišljamo i dizajniramo prostor. Neke od najnovijih praksi arhitektonskog projektiranja prepoznale su da film, koristeći se specifičnim okruženjem ekrana, može pružiti izvor nove arhitektonske imaginacije dok kontekstualizira naše kinestetičko iskustvo prostora. U ovom ću članku istražiti kako je kinestetička imaginacija kontekstualizirala arhitektonsku praksu u odnosu na uspostavljene prakse arhitektonske reprezentacije.

Rani filmski projekti, kao što je *Man with a Movie Camera* Dzige Vertova (1929.), prepoznali su analogiju između filma i kinematografskog oka, a time i mogućnost proširenja percepcije od paradigmatske promjene uvjeta promatranja ka konstruiranju stvarnosti kinematičkim sredstvima. Podrijetlo takvog prijenosa iz pozitivno definiranoga stvarnog prostora u prostor koji prenose mediji identificirano je u vrijeme nastanka modernističke paradigme prostor-vrijeme. Analiza prvih modernističkih arhitektonskih eksperimenata, od Sant'Elia do Le Corbusiera, otkrila je zajedničku tendenciju reprodukcije kretanja; ipak, nesumnjivo svjedoče zanemarivanju određenih načina zamišljanja prostora. Najvažnije je među njima nepoštivanje našeg stvarnog iskustva i odnosa s prostorom, koji su u osnovi kinestetički.

→

ABSTRACT

Histories of architecture have long-recognized the vital role of concepts, strategies and principles exchanged between architecture and film, which reconfigured their systems of knowledge and made this relationship rich. Nonetheless, film has been used mainly as an instrument of narration and representation in architecture, only rarely engaged in questioning how it affects the way we understand, think and design space. Some of the most recent architectural design practices have recognized that film, using its specific screen environment, can provide a source of new architectural imagination while contextualizing our kinesthetic experience of space. In this article, I will examine how kinesthetic imagination has informed architectural practice in relation to the established practices of architectural representation.

Katarina Andjelkovic

Atelier AG Andjelkovic, Beograd / AG Andjelkovic Atelier, Beograd

O toj ideji svjedoči inkongruencija između kinestetičkog iskustva prostora i načina na koji to iskustvo pretočiti u arhitekturu, što se ogleda u razvijanju ideja i znanja strogo unutar četiri kategorije: savršen sastav oblika i volumena, tipologija, estetika i tehnologija; ne ostavljajući prostora za imaginaciju izvan ove klasifikacije. S druge strane, naglašavajući problem vizualne reprezentacije, Giedion skreće pažnju na multiperspektivni karakter (kretanje) i otuda na kinematički element koji je otjelovljen u oblikovanju (prostoru) određenih primjera moderne arhitekture. Primjenjujući ovu tendenciju angažiranja filma kao alata za izražavanje kinestetičkog iskustva u arhitekturi, možemo ponuditi još jednu interpretaciju ovih pokušaja. S obzirom na činjenicu da je teoretizacija filma nakon Drugog svjetskog rata bitno utjecala na gledateljevu percepciju vremena i prostora, stvoreni su uvjeti za povezivanje filma s određenom prostornom organizacijom.

Kao posljedica toga, konstrukcija gledateljeve perspektive između stvarnog prostora i prostora prenesenog medijima imala je za cilj omogućiti transformaciju objekata i prostora nesvjesne optike, iluzija, fikcije i optičkih modaliteta u njihovim vremenski utemeljenim režimima. Implikacije u arhitekturi mogu se prepoznati po onome što Penz i Lu nazivaju kompetencijom pokretne slike da otkrije nove prostorne i narativne strukture i tako prevlada tradicionalne prostorne organizacije. Iz teorijske perspektive, ova križna razmjena dvadesetog stoljeća koja konačno ,,uspostavlja" stvarnost kinematičkim sredstvima čini se kao iznimno oslobađajući proces razvijen na ekranu. Što je još važnije, čini se da je arhitektima pružena nova sloboda koju nudi nematerijalni svijet pokretne slike.

KLJUČNE RIJEČI
kinesthetic experience, film, movement, architectural design, representation

ARHITEKTURA, POKRET, MEDIJI | ARCHITECTURE, MOVEMENT, MEDIA

INTRODUCTION

Early film projects, like *Man with a Movie Camera* by Dziga Vertov (1929), recognized an analogy between film and the cinematic eye, and thus the possibility of extending the perception from the paradigmatic change in the viewing conditions to the construction of reality by kinematic means. The origin of such a transfer from a positively defined real space to the space mediated by media was identified at the time of the emergence of modernist space-time paradigm. The analysis of the first modernist architectural experiments, from Sant'Elia to Le Corbusier, revealed the common tendency to reproduce movement; nevertheless, they undoubtedly testify to the neglect of certain ways of imagining space. On the other side, by emphasizing the problem of visual representation, Giedion draws attention to the multi-perspectival character (movement) and hence to the kinematic element that is embodied in the design (space) of certain examples of modern architecture.[1] Taking this tendency to engage film as a tool to express kinesthetic experience in architecture, we can offer another interpretation of these attempts. Considering how the theorization of the post-WWII cinema had fundamentally influenced the spectator's perception of time and space, conditions have been created for connecting film with a specific spatial organization.

BEYOND THE BOUNDARIES OF SELF-REFERENTIALITY

The discussion's concern to explain the dominant modes of spatial representation significantly obscured the role of kinesthetic experience as a way of imagining space. Anyhow, some of the late 20thcentury architectural design experiments have set the practice beyond the boundaries of self-referentiality, in which architecture is considered to be an indicator of pulse, liveliness, facing the senses. Accordingly, the contemporary experiments tend to generate conceptions which classify architecture not only in the context of a purely technological, geometrical and typological appearances, but also as a perceptual category. Today it is quite clear that architecture of the media age has finally set the observer in the central position of the analysis.[2] In consequence, the recognized categories of knowledge have been replaced by the experience as a privileged category in architecture. In other words, the material entities, such as an object or a building, associated with the technologies of motion and media, are visually conditioned rather than materially assessed. That is why searching for appropriate terms to address this issue pushes the limits of the discussion to levitate epistemologically between the *conceptual* and the *experiential*. This tendency is characteristic of the work of German art historians of the *Einfühlung*.[3] Through the most important principles established in their work, the art historians of the *Einfühlüng* enhanced critical dialogues to meet the conditions of viewing space from the standpoint of the body in movement. Talking about a choice of the 'interpretations' of movement would be misleading, for what one is choosing here is also the experience which embodies interpretation, and therefore features

1
Koeck, *Cine|Scapes: Cinematic Spaces in Architecture and Cities*, 10.
2
Read in: Leighton, *Art and the Moving Image*, 7–48.
3
The son of Friedrich Theodor Vischer, Robert (1847–1933), used the term *Einfühlung* for the first time in his essay *Über das Optische Formgefühl: Ein Beitrag zur Aesthetik* (On the Optical Sense of Form: A Contribution to Aesthetics) from 1873. Einfühlung meant for him the viewer's active participation in a work of art or other visual forms. He put the viewer in the centre of aesthetic discourse and thus effected a very important transition from a focus on the work of art and its aesthetic "being" to an emphasis of the role of the spectator. Read in: Nowak, "The Complicated History of "*Einfühlung*," 301–326.
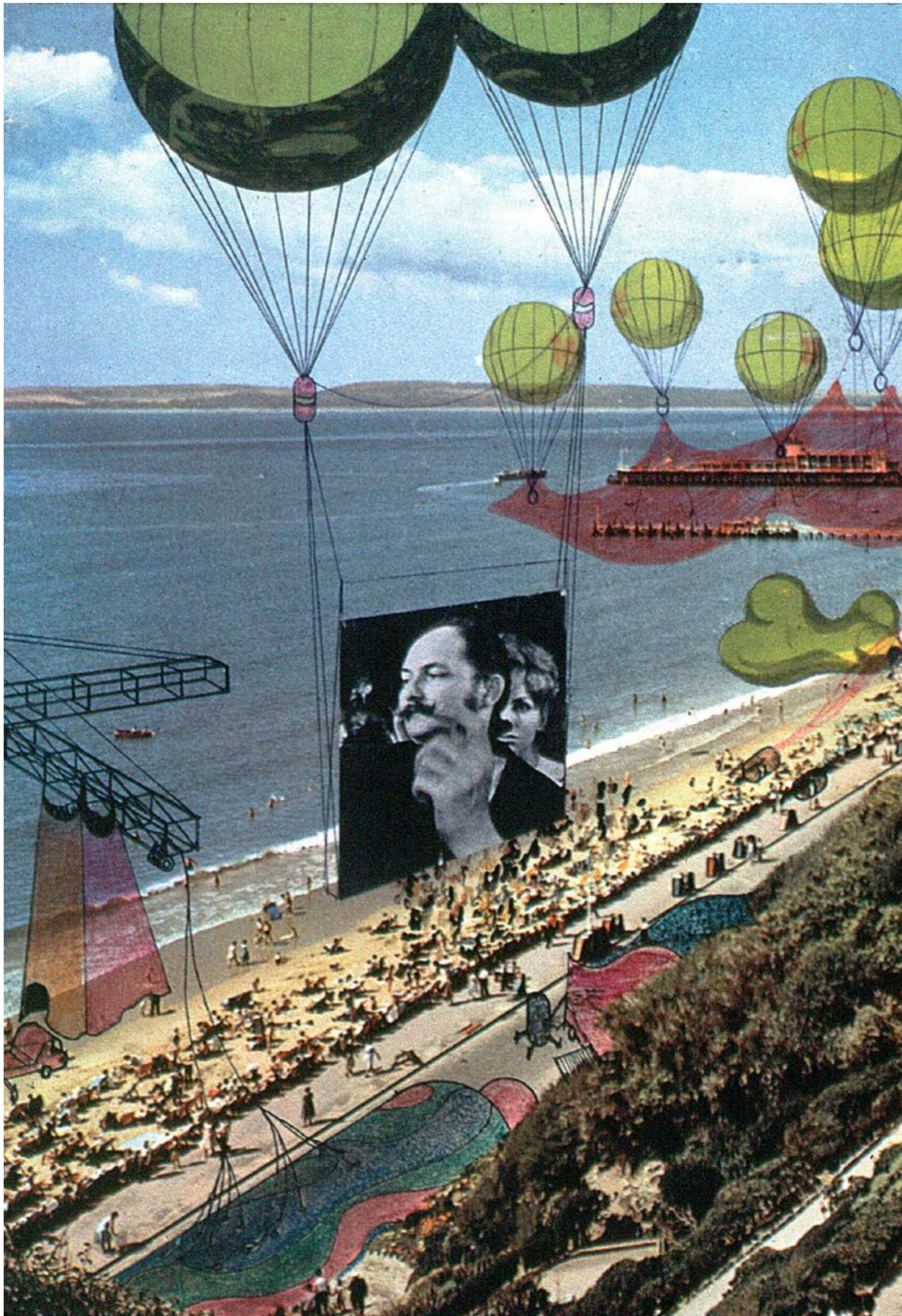
our real kinesthetic experience of space. Apart from identifying mutual interactions between the space and the body, this method also involves the risk of direct juxtaposition between *the form of space* and *the movement of the body*, as anticipated. Being the mirror for the basic principles of modern architecture, it reflects unity and coherence, discontinuity and fragmentation, as pure compositional issues of shaping spaces. As such, they owe the definition of the object that recognizes the world as a quantifiable phenomenon, with optical and geometrical proof of the accurate description of the world.[4] This is in contrast to Merleau Ponty's remarks about the role of body movement to highlight the idea "that object characteristics remain constant denies our ability to mentally change the identity of an object by displacing it."[5]

With this contrast, my claim is that such negotiations between the design and representation of space are neither intent on discussing the form of space, the object itself, nor the observer. Today we can offer another interpretation to these attempts. Instead of studying abstract elements or the object itself, we tend to engage in quest ioning relationships between the objects. This is in compliance with some of the most recent architectural practices that have recognized the power of invention of film to provide new source of architectural imagination while contextualizing our kinesthetic relationship with space. In particular, the analysis of several recent collage and film montage experiments has revealed ways of departure from the conceptualization of architectural elements to the conceptualization of relationships between these elements in the immaterial environment. This invitation to bring together elements which have not been treated in connection to each other triggers a true cross-aesthetic review that goes beyond the established knowledge classification. As a consequence, we may achieve results that imply different spatial order, which is determined by the very unpredictability and uncertainty of their connections.

ADDRESSING THE TERM KINESTHETIC IN ARCHITECTURE

Although the definition of the term *kinesthetic* is still inconsistent and therefore varies in literature, we may point to the signification of the notion *kinesthetic learning* as learning by carrying out physical activity rather than listening to a lecture or watching a demonstration.[6] Addressing "experience by doing" in this research, the notion *kinesthetic* denotes real-life experience of walking, perceiving and constructing movement, by inscribing a spatio-temporal continuity of the urban space. Burdened with connotations of the strict classification of knowledge, contemporary architectural debates typically avoid addressing the kinesthetic experience of space, and the question of how to translate that experience into

architecture. Nonetheless, steps are taken to address the term *kinesthetic* (as featuring motion, direction, position, rhythm, speed, found in seeing, among others) to deal with the architecture of variability, ephemerality and transience. It is thus no concidence that the praxis of architectural representation is committed to capturing and managing movements and change over time, decisively addressing the role of direct participation in space. This visionary idea was most thoroughly treated by thinkers such as Giedion and de Certeau, and in recent years, by Iain Borden.

Borden's 'body-centric space production' addresses this dialectic by involving the issues of time, touch, sound, muscle, movement, balance, rhythm, and counterrhythm as a set of complex spatial actions.[7] By analyzing the action performed between the body, skateboard and terrain in his *Skateboarding, Space, and the City*, Borden no longer recognizes one fixed external reality: he believes that a perceived reality is inseparable from the actions performed in space.[8] To avoid any direct reference to the shape, geometry and topology of space, a different reading is suggested here: hiding behind this problematic is the inseparability of the elements that provoke relationships in both space and body with their own actions, which are visually conditioned. Considering that traditional tools of imagining space have no capacity to convey these relations in the organization and representation of space,[9] we are faced with the difficulty of translating it into architecture. Namely, our action is suspended between insufficiently defined relationships of the materiality of real space and the immateriality of movement and changes over time. In consequence, what we recognize during the process of notation is that the skateboarder, while "producing" the architecture, simultaneously defies and embodies its representation. By challenging possible ways of making space visible, the crisis is reflected in the recognition that our methods and conventions of design are not timeless. Quite to the contrary, these conventions are subject to change as are our negotiations between the arts, moving images and architecture throughout the 20th century. Observed through the lens of fluidity provided by the moving image debates after the 1960s,[10] these disciplinary negotiations redefined what can be considered as art. Moreover, as anticipated by Bergson who claims that cinema has become a model for human perception, the category of experience has given way to a new interpretation of the dynamics of modernity: "cinema became art by modulating the viewers' embodied sense of space."[11] In consequence, constructing the viewer's perspective between real space and space mediated by media was aimed at allowing the transformation of objects and spaces of unconscious optics, illusions, fiction, and optical modes in their time-based regimes. The implications in architecture can be recognized in what Penz & Lu call "the possibility of challenging the traditional spatial organization through the ability of the moving image to reveal a new spatial and narrative structures."[12] From the theoretical perspective, this cross-twentieth-century exchange to finally "set" reality by kinematic means appears to be a hugely liberating

process developed on the screen. More importantly, it seems to express the new freedom for architects afforded by the immaterial world of the moving image.

DETECTING RELATIONS
BETWEEN REAL
AND CINEMATIC SPACE

The tools that we used to design space while interrogating visual representation, such as collage, system of notation and montage, are recognized today as part of the architectural design methodology. In this methodology, 'movement' functions as an interface between subject, space and views. Despite enormous potential that this shift has provided, the problem of translating 'movement' into architecture is still under consideration. This is due in large part to the fact that, at least in visual terms, 'movement' was usually resolved in the expression of dynamics that served to stimulate human senses and produce perceptual experience. Namely, from Marinetti's experiments in poetry to Duchamp's paintings, and from the architecture of Sant'Elia to Le Corbusier, we notice the common tendency to stop time in space and reproduce movement to become visible (Le Corbusier). This process was usually the result of creating movement which is subordinate to the forms used in particular spatial system, i.e. geometrically defined by urban planning. Nonetheless, in the transition from the 'creation of movement through space' to the 'creation of space through movement,' it seems that the decisive role in creating the concept of space was played by the participating subject. Yet, modern attempts of breaking visual conventions are related to discovering and interpreting positions and distances, showing motion, changing the orders and time of our spatial experience as participating subjects. Thus, conditions are created for separating form from the appearance of an object but, with the structuralist shift, the movement has taken on the role of organising space. As de Certeau encounters the transition to the 'creation of space through movement' in reverse, he claims that "lived space is a place of *tactile apprehension* and *kinesthetic appropriation:* territory in which seemingly unremarkable pedestrian movement begins to actively shape spaces in the city."[13] However, according to Vidler, architectural practice has been constantly suspicious of reified analogies, finding in poststructuralism a mode of setting architecture in motion.[14] Eventually, Gandelsonas comments on his architectural practice "as an area of production where the subject works in transgressive way with the notion of rules as a limit."[15] Thus, architecture has begun to be seen not as a form of language *per se*, but instead as a form of writing,[16] thereby expanding the cultural system, of which architecture and urban spaces are elements, to incorporate movement. Just as the form separates itself from the appearance in this context, it is now looking for support in other manifestations of the visible. In the environment of a completely new spatial system, such as the depth of field, zoom and frame, we can raise a question: how does the body movement and its interaction with the space become recordable, representable, and reproducible? Throughout the 20th century, there has been an ongoing struggle to overcome the intense dialectic developed between the systems

4
Hill, "Drawing Forth."
5
Merleau-Ponty, *Causeries 1948*.
6
Ashbaker and Morgan, *The Paraprofessional's Guide to Effective Behavioral Intervention*, 169. 7
Borden, *Skateboarding, Space, and the City*, 92, 96.
8
Ibid, 105.
9
Which were formulated early in antiquity: the concept of space that present space as the recipient, the container of all things (corresponds to the concept of *chora*), and another to which the notion of space would be consequent to a perceived relation between objects.
Read in: Jammer, *Concepts of Space: The History of Theories of Space in Physics*).
10
Cf. Leighton, *Art and the Moving Image*.
11
According to Richmond, read in: *Cinema's Bodily Illusions*.
12
Penz and Lu, *Urban Cinematics*, 9.
13
De Certeau, *The Practice of Everyday Life*, 97.
14
Vidler, "Refiguring the Place of Architecture," 10.
15
Gandelsonas, "From Structure to Subject," 28.
16
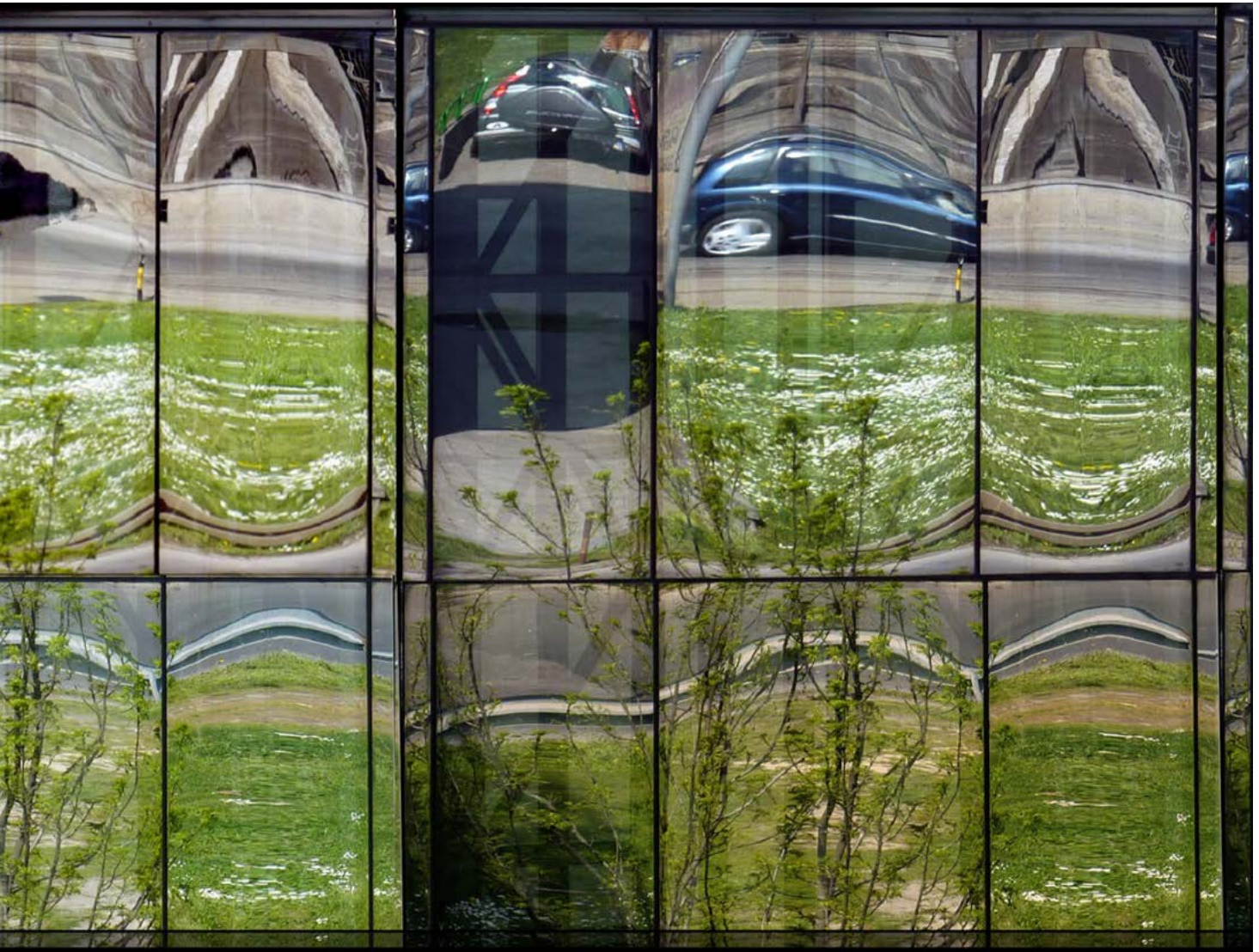Vidler, "Refiguring the Place of Architecture," 10.
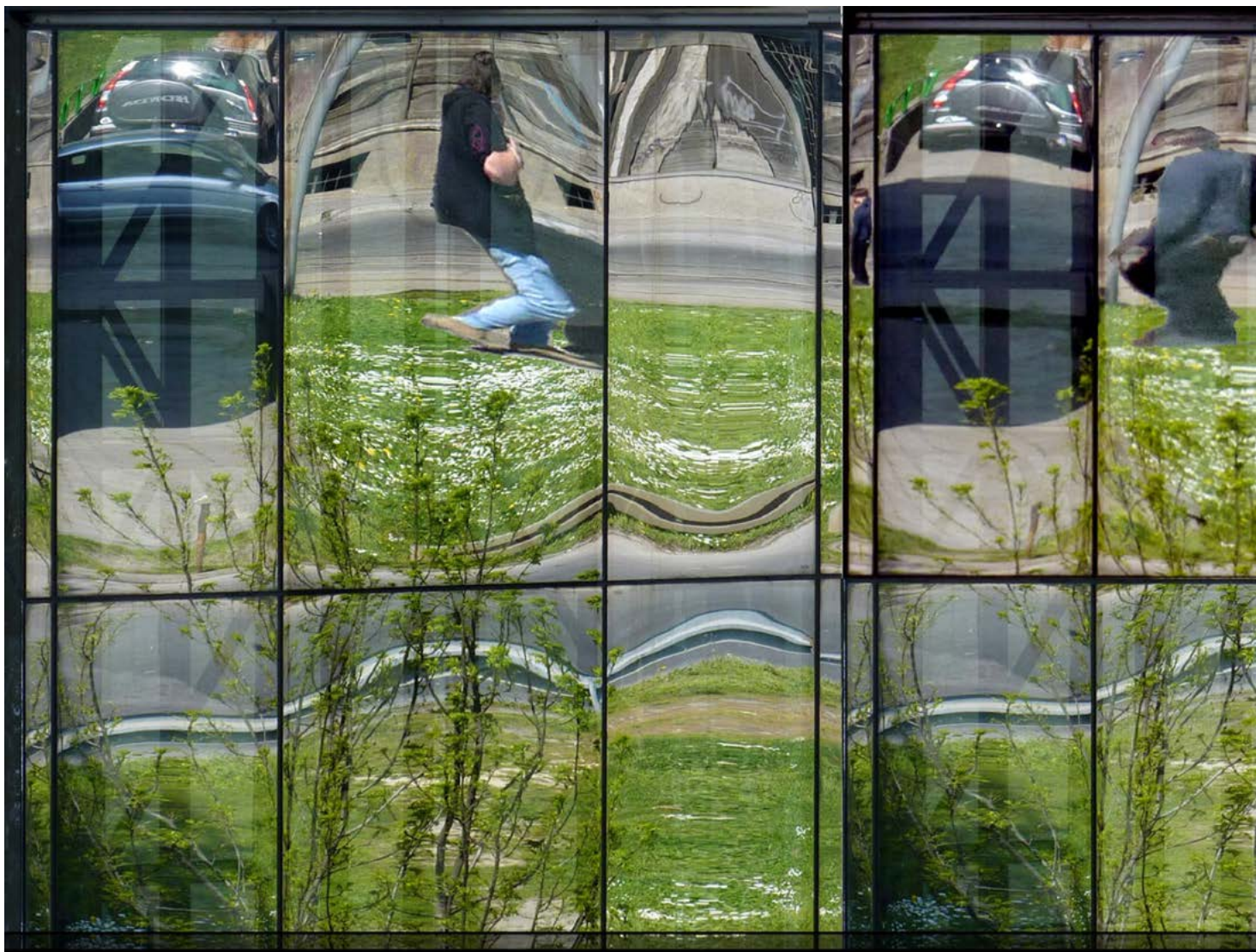
Fig. 2 The reflections of movements on the elevator's exterior glass surface. Experiment by Katarina Andjelkovic, 2015. Courtesy of the author.
 / Sl. 2 Refleksije pokreta na vanjskoj staklenoj opni dizala. Eksperiment Katarine Andjelkovic, 2015. Ljubaznošću autorice.
↑

of production and representation by examining opportunities provided by new media, especially film and film processes.

To be specific, despite negating the potential dialectic between 'the creation of space through movement' (as immaterial practice) and 'its material expression in architectural representation,' which is articulated by Iain Borden and practically applied in the montage technique to record the consecutive sequences, the destabilization process of architectural representation has yet to begin. This was achieved by using montage to directly address the viewer, in order to detect the intention of the filmmaker to express the kinematic experience of space. It is particularly evident in the project "Instant City" (1968, fig. 1) by the Archigram group. By emulating the choreography of city movements, from moving objects (airships, tents, caps) and technology (cranes, refineries, robots), the film-maker transformed the city into an audiovisual event. In this way, the framed space disappears in favor of a "moving city" in time and space. It demonstrates an impossible representation, that of a city in permanent transformation which is only an incident in time and space. Accordingly, re-interpreted as a tool with which to detect clues in kinesthetic segments, the collage technique applied to "Instant City" ends up revising relations in order to establish an innovative re-evaluation of (archi)tectonics. In other words, architecture is replicated through the experience of its presence. In this way, the Archigram group revolutionized architectural representation and, by acknowledging the observer, challenged the status of the physical elements belonging to the real space.

FROM THE
REAL TO THE SCREEN
ENVIRONMENT

In reversing our traditional *modus operandi* strongly supported by screen immateriality, it is critical to regard the physical act of *moving through space* as a way of materializing relations from the real to the screen environment. On the other hand, operating ontologically from within both cinema and architecture to develop their own practices, we can say that recorded movement becomes the "condition" of a screen, and our experience of viewing now affects a change between *sight* and *body movement*. Welcoming this ultimately relational concern which allows the monitoring of its relationship with the Avant-garde film, film of the montage era and the most recent practices, I attempted to analyze different effects of the viewing conditions on the screen. I acted from the belief that their visual languages of communicating movement against fixed space on the screen can encrypt our contemporary visual experience. Examples range from ways of transforming relations between *sight* and *movement* on a screen, to the reflections on the glass façades.
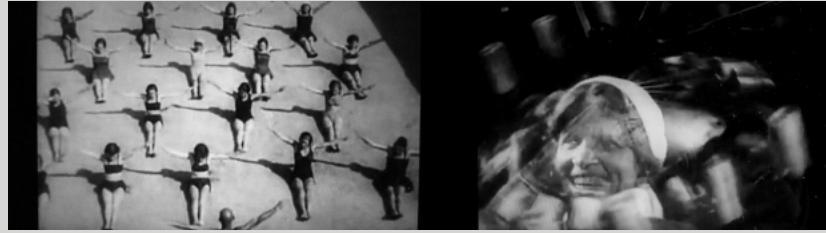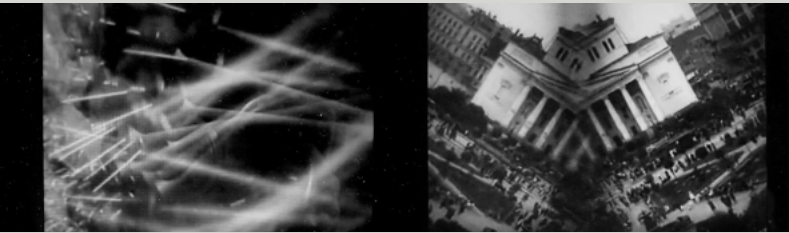
Fig. 3. Dziga Vertov, *Man with a Movie Camera* (film studio VUFKU, 1929) © film stills. / Sl. 3. Dziga Vertov, *Čovjek s filmskom kamerom* (filmski studio VUFKU, 1929.) © film stills
↑

ARHITEKTURA, POKRET, MEDIJI | ARCHITECTURE, MOVEMENT, MEDIA

One case would be the projection of movement on the elevator's exterior glass surface (fig. 2), which appears in the form of relations between images. Although these practices are based on different conceptual roots, we can learn about the unfolding of the spatial flow by measuring the temporal progression of the images flowing through a series of successive frames sequentially on the elevator's glass surface.[17] In this case, observers are faced with the juxtaposed movements: the first movement direction has emerged from the function of the elevator to provide vertical transportation, and the second one acts as a multi-screen projection.[18] The effectiveness of reading the image of reflected objects from panorama to the glass elevator surface is based on the illusion that allows movement to be rendered in new ways against fixed space. By using the effects of reflected movement, it retains its criticality in the observer who can experience that the displayed object no longer appears as an object, but as a structure based on light, sound and movement. Just as the incorporation of movement runs the game of separating form from the sign of an object, its projection on the glass surface comes up with transforming an object into the manifestation of the visible—the traces of movements. More precisely, reconstructing the spatial scene onto the glass surface is engaged with managing an immaterial illusion to embrace a new vision of architecture. Given that movement is no longer subordinate to a certain spatial system of the urban space, but tothe depth of field and frame of the two-dimensional environment, what we see on the elevator surface is not only the presentation of a new way of seeing space; rather, it gives form to a new mode of perception.

In a similar fashion, searching for new ways to present the image of the city in *Man with a Movie Camera* (Vertov, 1929, fig. 3), the camera's own movement is augmented and multiplied as it is coupled with the city's vehicles of transport.[19] Attempting to convey the idea of re-imagining cities through these film encounters, through illusory movement, the director Vertov stops the film flow suddenly and keeps a frame, displacing his viewers to a state of tranquility as a powerful epistemic break, and transporting them back again (in a reanimated state of the city) by way of montage. It is a mechanism that moves at a specific speed and rhythm, and shows traffic flows, blurred or slowed down; as a visual sign for speed, the scene refers to our internal reflection of movement. Therefore, by recognizing kinesthetic features of motion, direction, position, rhythm, found in seeing, we can identify Vertov's method of filmmaking as the direct focus on the viewer and his experience of watching a film. Respectively, by encoding our experience as an extended cinematic eye, Dziga represents our reaction—our inner reflection of the motion—a time-lapse that we produce by stepping back from this motion. As a result, it is not the city which is frozen; it is us, the viewers, who are petrified by becoming aware of this omnipresent speed of cities, surprised to recognize our individual perceptions in relation to it by blurring, at times, our personal viewing positions.

17
Katarina Andjelkovic, "The Cinematic Aspect of Architecture: The Role of Time in Discussing Alternative Architectural Strategies," 259.
18
Ibid, 259.
19
Bruno, *The Atlas of Emotion*, 24.

IN CONCLUSION

We have the power to choose how to perceive movement, thereby legitimizing multiple perspectives of observation and identifying consequences that cinema has had on our perception of time, space and movement. Nevertheless, from the depiction of foreign and domestic views in early panorama films towards the simulation of travelling through space, it seems to me that the very technique of filmic representation was challenged to aspire to motion. Not only do the subjects of urban views move, but their body movement is transfered from the real to the space of the screen to become part of filmic representation. As these accounts with the moving image have demonstrated, the displayed modes of representation aimed at embodying the subjective spatial and temporal mobility were only reinforced by the affinity of film towards architecture and art throughout the twentieth century.

.

BIBLIOGRAPHY / POPIS LITERATURE

Andjelkovic, Katarina. "The Cinematic Aspect of Architecture:
The Role of Time in Discussing Alternative Architectural Strategies."
Serbian Architectural Journal, Vol 7, No.2 (2015).

Ashbaker, Y. Betty and Morgan, Jill. *The Paraprofessional's
Guide to Effective Behavioral Intervention*. New York and London:
Routledge, 2015.

Bruno, Giuliana. *The Atlas of Emotion: Journeys into Art,
Architecture and Film*. London: Verso, 2002.

Borden, Iain. *Skateboarding, Space, and the City*. Oxford: Berg,
2001.

Choisy, Auguste. *Histoire de l'Architecture*. Paris: Gauthier-Villars,
1899.

De Certeau, Michel. *The Practice of Everyday Life*. Berkeley,
CA: University of California Press, 1988 [1980].

Gandelsonas, Mario. "From Structure to Subject:
The Formation of an Architectural Language." *Oppositions*, 17
(Summer, 1979).

Giedion, Sigried. *Building in France, Building in Iron,
Building in Ferro-Concrete*. Los Angeles, CA: Getty Research
Institute, 1995 [1928].

Hill, Jonathan. "Drawing Forth." In *Proceedings: The Unthinkable
Doctorate*. Brussels: Sint Lucas, 2005.

Jammer, Max. *Concepts of Space: The History of Theories
of Space in Physics*. Mineola, NY: Dover Publications, 1993 [1954].

Koeck, Richard. *Cine|Scapes: Cinematic Spaces in
Architecture and Cities*. Abingdon, Oxon: Routeldge, 2013.

Leighton, Tanya, ed. *Art and the Moving Image*. London: Tate
Publishing/AfterAll, 2008.

Merleau-Ponty, Maurice. *Causeries 1948*. Paris: Editions du Seuil,
2002.

Nowak, Magdalena. "The Complicated History of "Einfühlung."
ARGUMENT, Vol.1 (2/2011).

Penz, François and Lu, Andong, eds. *Urban Cinematics:
Understanding Urban Phenomena through the Moving Image*. Bristol:
Intellect Ltd., 2011.

Richmond, Scott C. *Cinema's Bodily Illusions*. Minneapolis,
MN: University of Minnesota Press, 2016.

Vidler, Antony. "Refiguring the Place of Architecture." In *Agrest
and Gandelsonas*: Works. Eds. D. Agrest and M. Gandelsonas. New
York, NY: Princeton Architectural Press, 1995.

ARHITEKTURA, POKRET, MEDIJI | ARCHITECTURE, MOVEMENT, MEDIA