


Time-light-space: Olafur Eliasson's agency manipulates embodied biological experience of architectural space

Dr. Niall O'Hare^{1*} 

¹Ulster University, Belfast School of Architecture, Belfast, United Kingdom.
n.ohare@ulster.ac.uk

*Corresponding Author

Received: 19.08.2022
Accepted: 20.02.2023

Citation:
O'Hare, N. (2023). Time-light-space: Olafur Eliasson's agency manipulates embodied biological experience of architectural space. *IDA: International Design and Art Journal*, 5(1), 31-41.

Abstract

The use of artificial brightness as a material form within "Big Bang Fountain" by Olafur Eliasson in 2015, provides insight into how the perception of time articulates subjective meaning and understanding of architectural space. This work outlines the relationship between the human ecological experience of time and the transitory, elemental ambiances of perceptual light cues used by the artist. This fundamental correspondence within Eliasson's work is founded upon exploring the interstice between perception and experience. This paper argues the interstitial moment of brightness/darkness experienced which tempers the illusionary occurrence of holding time still. The examination of this work seeks to broaden the understanding of how the experience of the phenomenological flux of architectural space subject to light occurs. As such continual incremental changes in perception draw attention to the ecological mechanism which shapes innate the relationship with architectural space. The exploitation of characteristics within perceptual ecology, known to humankind innately, but perhaps not explicitly, informs and elucidates consciousness of the diurnal experience of architectural space. The basis of how and why this work causes a response is a result of the exploitation of evolved phenomenological sensory experience rather than recognition of Euclidian spatial geometries.

Keywords: Architecture, Space, Time, Light, Perception

Extended Abstract

Introduction: This text outlines the relationship between the human ecological experience of time, and the transitory, elemental ambiances of perceptual light cues used by the installation artist, Olafur Eliasson. It is anticipated that the usefulness of this research paper will engender relevance to sense experience and the transitional sense of the changing presence of light within architectural space.

Purpose and scope: By nature, the daylight in architectural spaces is a naturally transient element, which is limited by visual perception or a negligible reference to the sequential manifestation of light form. Experience of the differences and changes of light in space is affected by the qualities of the space itself. However, the nuanced changing of light in spaces happens overtime despite the space. "Big Bang Fountain" for instance, provides a useful insight to the nature of light's reflection within architectural spaces. It also offers valuable information necessary to understand how the perception of light and shadow in space occurs. This fundamental correspondence between Eliasson's work, and the experience of space, is founded upon this text's exploration of the interstice between perception and experience. The experience of this work propagates specific environmental qualities which are useful topics for practical and pedagogical investigations. The aim of this paper is twofold. There is a lack of methodologies in architecture for the investigation of light, specifically daylight, in relation to human biological heritage, which make it an underdeveloped area of study. Thus, this text seeks primarily to advance alternative rationales to question the innate human responses to light. Secondly, teaching experience suggests that the architectural pedagogy of light requires a more nuanced approach, which may allow the students to question their ideas on architectural space more deeply. This text aims to investigate the end user's experience provided by "light" in architectural spaces. Thus, it presents an unorthodox glance to practitioners and students to spur individual curiosity.

Method: This paper argues, the interstitial moment of brightness/darkness experienced within the work, instigates a shared response which tempers the illusionary occurrence of time held still. The primary purpose upon which this text

reflects is change. Change takes place within a controlled and specific environmental experience. These changing moments of light in time are necessary to develop a greater understanding of why knowledge of space occurs as it does. Alongside this, it may be possible to understand better how this experience occurs as a phenomenological attachment to space. As both a practitioner in architecture and an educator in architecture, part of this paper's scope is its ability to reach out to architects and students alike and to help practitioners to question sensorial experiences and what may be happening to their visual perception when they experience an architectural space. Furthermore, this research aims to enable students to begin questioning why they encounter light in architectural space as they do. This text draws attention to the underlying principles of what connections that a student of architecture can begin to create for themselves when they experience light and darkness in architectural spaces. Providing scope for a student to create a "notional dialogue" between an encountered space and the sensorial mechanisms manifesting to them, services a broader understanding of experience. Acknowledging and becoming open to how and in what ways perception is biologically tuned to space be a consideration which is much needed within the architectural practice debate.

The methodology utilizes reflection as a tool to formulate understanding. Reflection and reflective practice provide scope to consider why the experience of architectural space occurs in the way it has. Reflection as a tool to discover insight from experiential teaching is a skill that appears less available to student cohorts. The text's reliance upon reflection over time combined with insightful reading has been the method to which a frame to hang the perspective of this paper upon was constructed. Technological advances are at the forefront of practice and pedagogy which arguably sows seeds of embodied detachment driven by constructed digital environments. "Big Bang Fountain", for instance, relies upon technology to exist yet connects the viewer to an embodied experience. These are the biological mechanisms of embodiment that are triggered by this work. The sensation of the work is overwhelming - it is instantaneous - and penetrates our visual perception to its core. Arguably reflective practice is the best-suited method to gain insight from the experience of the work. The article should be read as a recollection of the original experience, thus its method is reflective.

Findings and conclusion: The continual incremental changes in perception that this work utilizes draw attention to the ecological mechanism which shapes innate perceptual relationships with architectural space. This paper's method of examining these incremental changes is in detail. Moment after moment helps unlock the flux of light change, shadow change, and sound change. This is an important methodology in understanding architectural space-time-light and light awareness. The exploitation of characteristics within perceptual ecology, known innately but perhaps not explicitly through this work, informs and elucidates consciousness of the diurnal experience of architectural space. The findings of this paper and the manner it concludes suggest that biological connection to architectural space, endowed with daylight, experienced within the diurnal sequence of time, is a critically crucial element in making sense of the contextual experience of architectural space. "Big Bang Fountain" exhibited in 2015 at Tate Modern, London, is a work that has resonated with this writer over a considerable time. Over an extended period, the historical experience of the work has enabled the formulation of arguments put forward. Only through this reflection in time could this paper evolve as a reflection on the use of artificial light and water as tools that can provide a clearer and better understanding of how the experience of daylight and the changing nature of light interlinks. To conclude, this research might appear to be counterintuitive. However, using the experience of artificial light within an enclosed art gallery environment, can and does inform understanding of sequential daylight through visual perception.

Keywords: Architecture, Space, Time, Light, Perception

INTRODUCTION

Olafur Eliasson's work, "Big Bang Fountain" (2015), part of his exhibition "In Real Life" at Tate Modern, London 2019/2020, combined sound, artificial brightness, and time to investigate the conditions of how experience manifests. This reflective text explores and considers how the human body interprets uncertain visual complexity caused by a work which creates "a conjoint phenomenality" (Bayne, 2010: 11). The simultaneous interoperation of sensation, understanding, and perceptual calibration is embedded in sensorial perception as a confounded representation of interstitial reality. How consciousness calibrates and reflects upon the fleeting overlapping moments of light/darkness/sound within the confines of the gallery space draws attention to the confluence of immediacy. This suggestion of memory informs the response to momentary experience, i.e. "now". Utilizing the stroboscopic flux of light and the perceptual afterimages it creates, provides a useful metaphor to begin consideration of changing light consciousness of architectural space subject to the diurnal sequence. Architectural space which is subject to light is a complex scenario. The primary components of spatial size, structure, materiality, apertures, orientation, and artifacts contribute when combined with the darkness of light to a multiplicity of Fluxus. The "Heraclitan doctrine" (Zeki, 2009: 2827)

heralds the ambiguity of constant change. As a spectator, the definition of Eliasson's work is through the communication exchange between the interstitial gallery moment of experience and the representative manifest of the work as a still image (Figure 1). "Big Bang Fountain" situates light as a fundamental appropriator of uncertainty within repetitive, glancing moments. By recognizing characteristic mammalian ecologies of light as a sensorial dialogue in perception, the installation manifests itself as a repeating afterimage. The flickering afterimage continually changes while reinforcing itself as a repeating embodied image, in the same way, cognition may be unaware of the interstitial changes of the diurnal sequence, yet biology is not (Foster, 2020: 67).



Figure 1. Olafur Eliasson, *Big Bang Fountain*, 2015. © Anders Sune Berg

Mixed Memory

"The Condition of Sculpture" written in 1975 by William Tucker, situated sculpture in the world as the "language of the physical (whereby) new thought finds form by stretching the medium itself" (Tucker, 1975: 35). Light and gravity, Tucker suggests, are the fundamentals through which sculpture is, and through which it is experienced. In this relationship, however, "the property of actively giving light must remain that of the world, not of sculpture, just as movement is the prerogative of the spectator" (Tucker, 1975: 36). Movement and light, perception, and the experience, intertwine within Eliasson's work, and expose attention to the experience of tangible and intangible at one time by presenting time as a frozen element within collective experience. If memory is an amalgam of the past at this very moment, recollection becomes a dual historical and contemporary mechanism. Experience of each moment of light reveals itself in time, as it "arises from relation to things" (Merleau-Ponty, 1962: 412). While the experience of the infinitesimal memories, presented as droplets of water hanging in the air at this moment are "temporal light modulation... more commonly referred to as "flicker" have visual, neurobiological, performative, and cognitive effects on viewers" (Veitch & Martinsons, 2019: 790). Aligned to this, Eliasson suggests that "history is not external and objectified in a situation, but is inside the spectator" (Eliasson, 2007: 33). An interpretation of this may suggest that in every moment of awareness, a memory of the experience is, by its nature, historic. The history of a passing moment was at some point presented as now. This is the interstice between past and present. Interstitial grasping of sensorial cues emanating outside the body and acts as the vehicle through which the experience of an explicitly exterior event becomes a recollection through its sensorial translation.

The interchange between "stroboscopic visibility" (Veitch & Martinsons, 2019: 791) and experience portrays this phenomenological "historicity" (Merleau-Ponty, 1964: 92). What exists between now, following a previous, upon a previous now and after that, propagates time as the mechanism, facilitator, and communicator through which the process of the internal description of what is encountered is registered. These descriptive moments become a memory that is extended and fully aligned in time, through time. As such, the "Big Bang Fountain" is experienced as a series of moments which are joined together. The work becomes a moment halted within time, yet it provides an opportunity to evaluate time as a static entity over a protracted period. Within these moments motion can move us away from work, circulate it, move from side to side, or shut our

eyes and re-open them. Yet within this continual corporeal motion, observation of the work remains unchanged.

METHOD

This possession of time which Eliasson locks the perceiver into creates ownership of awareness through which questioning of individual understanding of experience takes place. This connects the work in such a way that it takes possession of personal experience. It provides the scenario for the observer to relate to the experience with uncertainty rather than certainty. The observation is anything but certain. It is outside of the observer's reality of experienced time. The visual perception of falling water in the form of rain is a familiar occurrence for many people. However, the observation of droplets of water in the form of droplets captured within a vertically dropping cascade is uncertain and unusual. There is no certainty within perception. The image is not a photograph of a still moment of water captured, it is not a freeze-frame within a film poised upon the edge of the movement. Witnessing the "stroboscopic effect" (Bullough & Marcus, 2016: 869) presents beads of water astonishingly hanging as individual stationary elements. Each bead's possession is captured within the reality of the perceiver's never-ending continual moment. The scope of this effect creates a unique framework upon which both practitioners and students are able to build new understanding and construct a reappraisal of embodied spatial awareness. This text aims to be an examination that broadens practical understanding of the phenomenological flux experience within architectural space subject to light and the sensory dialogue commonplace within it.

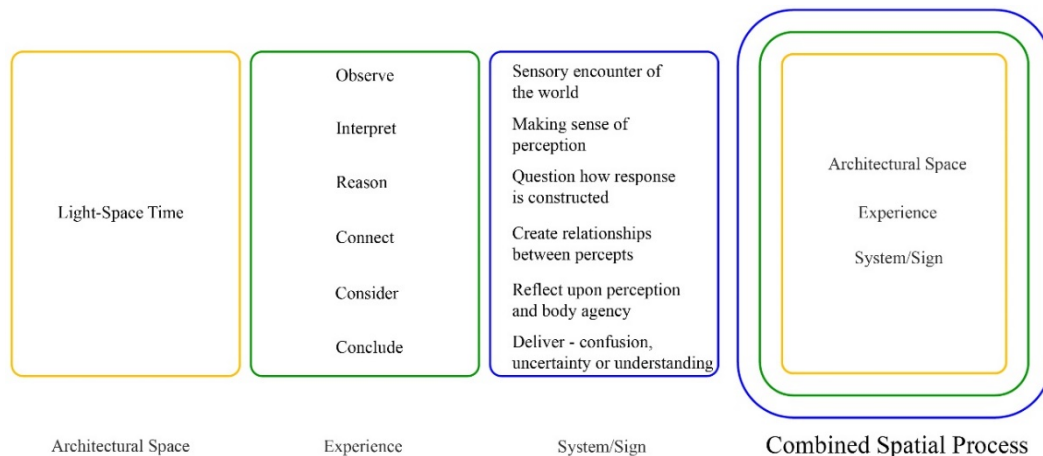


Figure 2. Notional dialogue in spatial process

Motionless Motion

By encountering the experience of beads of water hanging in the air perceptually motionless because of the effect of the "constant strobe rate" (Wilkins & Gray, 2015: 64) their positional dimensions in space are present to see. The volume, size, and opacity are open for a close examination, which presents the reality where one is beholding time as static, motionless, still. This stasis exploits sensorial perception through the reality of observation and challenges the idea that moments in time exist between the subject of observation and the observation of the subject. Within the experience environment – the gallery is intimate, approximately 25m² with "Big Bang Fountain" centrally placed with stroboscopic light raised above. It is lined with dark acoustic material to absorb sound and is sequentially filled with darkness and brightness. Experience of this space provokes, conjures, and manipulates vision, it propagates the illusion of something everlasting as implicit. The historian Pamela Lee suggests within her essay "Your Light and Space" that Eliasson "implicates his observer in a feedback loop of self-perception... seeing oneself seeing" (Eliasson, 2007: 35). The suggestion by Lee that Eliasson's work has the capacity to render the perceiver into a position of awareness of their self-awareness of self, challenges the everyday detachment and trust exhibited toward spaces encountered.

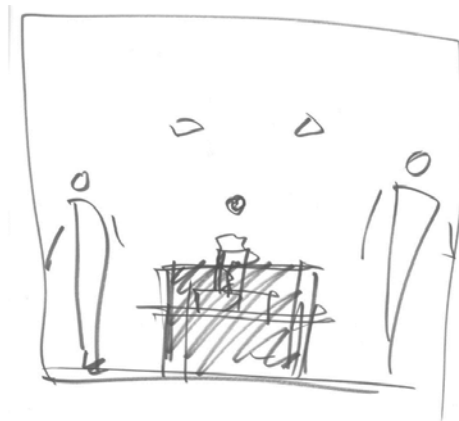


Figure 3. Sketch for “Big Bang Fountain” ©Olafur Eliasson, 2014

The ability of this work to capitalize upon “multiple object tracking” (Bennet et al., 2018: 1) within environmental experience has the capacity to influence consideration of, and interpretation of the environment met. Stroboscopic flashes of artificial brightness produce “a stroboscopic effect (which) can be defined as a change in motion perception induced by a time-modulated light stimulus for a static observer in a non-static environment” (Lee et al., 2018: 773). By utilizing this effect within an environment of complete darkness, the successive flashes enable alternate visual perceptions to be constructed. The flashes portray moving, transient droplets of water as static. It is an illusion, as the bead of water is not a single droplet or static. The bead is part of a moving sequence of droplets falling vertically within and against a black background. The water droplets are frozen within perception by a repetitive sequence of extreme brightness. The sequence between brightness/darkness and brightness/darkness, is the mechanism in which the successions of falling beads hang weightlessly in the air. The repeating pulses of intense brightness bracketed by complete darkness, interlock moments in the droplets fall upon the eye’s retina as both perceived image and perceived afterimage. When the perception of the droplets hanging in mid-air remains in thought, they are held as a perception of the object, not the object itself. Franz Brentano expands this point,

...by an object of thought I [mean] what it is that the thought is about whether there is anything outside of the mind corresponding to the thought. It has never been my view that the immanent object is identical with the “object of thought”. What we think about is the object or thing and not the “object of thought”. (Brentano, 1966: 77)

The environment of the “immanent” object could be any number of things, the brightness, the darkness, the bead of water, or a combination. Brentano provides guidance on the separation of the “immanent object” from the “object of thought,” while suggesting that one may provide an opening to the other. They are not part of the same sense experience, the bead of water that comes from the collective cascade of falling water, it is made individual and isolated in its singularity by the motion of its falling.

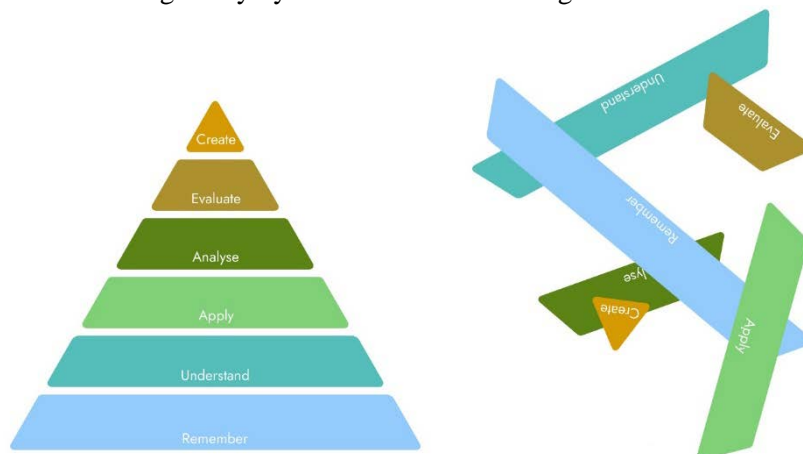


Figure 4. Shattering Bloom’s taxonomy of learning

When complimented with Bloom's Taxonomy of Learning, Brentano provides a useful pedagogical tool for architecture students to understand their experience of space. The layered domain which Bloom suggests helps students comprehend an idea of their growing wisdom. Eliasson's work shatters this domain and provides new questions about how we encounter and evaluate the experience. Ownership, presentation, and objectification of space are presented as considerations of building wisdom. Concerning this Brentano suggests, "all the appearances of consciousness are divided into two great classes - the class of physical and the class of mental phenomena" (Brentano, 1995: 77). This suggests that consciousness can be understood as the "intentional inexistence of the object" (Moran, 2000: 48). This notion is derived from the Latin verb "in-esse" meaning to be. Considering what Brentano believed, when a thought relating to a sensed object occurred, such as the hanging bead of water, it was an act of consciousness outside the reality of the bead. The phenomena which can be sensed, and the phenomenon which is derived through thought such as "a colour, a figure, a landscape which I see, a chord which I hear, warmth, cold, odour, which I sense; as well as similar images which appear in the imagination" (Brentano, 1995: 79-80). This spaciousness between the experience of lived life in the reality of sensed living and the imaginative exploration through interaction with the phenomena, of this lived world is close and inseparable. If "images which appear in the imagination" are physical phenomena it confuses understanding of the power of "immanent object" which Brentano has indicated he believes are not "identical" to the "object of thought". This ambiguity presents difficulty when building consideration of the correspondence between the "object of thought" and the "immanent object" as the bead of water cannot be both if they are not "identical".

It is the body that assists this phenomenological inquiry. It readily and automatically becomes the instrument or "tool" (Sartre, 1995: 325) which shapes exploration of the work. In this way, it becomes the filter through which sensation is opened and explored, it is the juxtaposition between the primordial and biological evolutionary process at work when Eliasson's work is encountered. The phenomena derived through sensual visual perception such as "a colour, a figure, a landscape" are vision based. Vision-constructed descriptive analyses becomes the "object of thought". This mechanism may allow perceptual analysis to make sense of what is apprehended by ordering them in a way that allows filtering the aberrations of vision into a comprehensible shape. This is an aspect of consideration that "requires much more input from other disciplines, including architecture... to give signposts to how buildings can be better sensed" (Perez-Gomez, 2020: 21). Language is one of the tools used to describe the shape of experience and perception of environments. These perceptions are moments and glimpses that are part of time-based recognition of something outside the body that afford captivation and intrigue derived from sight sense. The sound of "Big Bang Fountain" informs the sensed reality from which the experience of the work emerges. Like a musical chord, this work is not silent, the object made in thought is not quiet, yet consideration of a bead in apparent stasis or static isolation hanging in the air confutes sensual perception.

FINDINGS: SENSING COORDINATES

The visual experience of this work manifests multiple beads of water appearing as static. Water, captured by a vision in mid-flight, is apprehended by hearing as a sploosh or gurgle of falling water making contact with itself or an unknown surface. Sensorial perception overrides this water as static even when the end of the fall is heard. The gravity of the fall is noise that surrounds the perceiver. Clearly discernible as a penetration of the silent captured moment of stillness. The silent held fixity of the water hints toward the lie. The body senses the physical, but the physical is always outside reach. Vision presents a scenario that evolved to sense the environment encountered. Although vision has evolved many ways of seeing, the camera eye uses the lens, pupil, and retina as the chosen evolved biological solution for humans as one animal among many. Humans use their bodies as an instrument of perception and have continued to extend this possibility by developing abstract tools developed for lived life as extensions beyond biological sensorial nature. These sensorial extensions instinctively expand understanding of environmental conditions. They help navigation through environments that connect visualization of immediate surroundings with the experience of a greater world. Recognition of the conditions of this experience is apparent when "my body always extends across the tool which it utilizes: it is at the end of the cane on which I lean and against the earth, it is at the end of the telescope which shows me the stars" (Sartre, 1995: 325).

These constructed extensions allow humans to inhabit and respond in a modified way to the encountered world - adapt and adjust objects to accommodate being. Humans have the capacity to change their place in the world by affecting the environment inhabited with tools such as the “cane” or the “telescope” to navigate a path through what Husserl coined the “life-world” (Moran, 2000: 181). Paul Ricoeur in his analysis of Husserl’s phenomenology, described this as a “pre-given passive universal in all judgmental activity” (Ricoeur, 2007: 12). Merleau-Ponty continued this process by considering the “meaning” of experienced phenomena of the lifeworld without the imposed constraints of a “Cartesian” (Perez-Gomez, 1983: 49) frame. This makes understanding perceptions a biological universal, inherent within the human life system through time and over time.

A phenomenological enquiry based upon the sensorial openness of the body as it becomes the instrument of measure is a naturally transposed and calculated activity. Reading the perceptual openness of the body’s experience, where the environment is key, makes phenomenology an exploration of how meaning is made inside and out of individual consciousness. It becomes a discipline concerned with the beginning - the birth of individual consciousness. Eliasson’s work has the distinction of combining a constructed use of technology for the creation of a prosaic reality experienced by the perceiver. This reality is in opposition to a Vitruvian point of view based upon an objectification of space which is “Euclidian” (Perez-Gomez, 1985: 49), which is opposed to the sensorial experience of space which is embodied. Vitruvius finds the prosaic within the framework of geometry but loses sight of the possibility that in this creation, architectural space subject to light generates a sensorial response in humans. This work is the combination of “*techne (and) poiesis*” (Perez-Gomez, 1983: 47) as it becomes the technological realization of a poetic moment in time because the work relies upon stroboscopic technology to formulate conditions for changing perceptual response through vision. Complete darkness shuts down visual acuity while brightness and afterimage connect the body to a sequenced moment. The work becomes mimesis for the relationship humans have to the diurnal sequence in which perceives the day as one entirety, rather than the interstice of continual change between past and future which the body experiences and perceives. This percept is an outward realization, distinct and detached - the body as percept becomes the perception,

...my body does not perceive, but it is as if it were built around the perception that dawn through it: through its whole internal arrangement, its sensory motor circuits, the return ways that control and release movements, it is, as it were, prepared for a self- perception, even though it is never itself that is perceived or itself that perceives. (Merleau-Ponty, 1968: 9)

Perception is not of oneself, but the experience of the object to the subject as a relationship between object and subject creates the outcome of experience which formulates a perception. “Big Bang Fountain” becomes a work that demonstrates the capacity to translate a technical situation into a poetic one. This poeticism is created through the individual’s perception of the elements of the work combined to become an individual whole for the perceiver. This whole makes the work what it has become, yet to exclude one element may have made the work less of a convincing poem in light, and more of a technical exercise, empty and void of perceptual stimulation and intellectual dexterity. The notion that Eliasson has actively and intuitively manipulated the vagaries of time, such as brightness and darkness and interwoven these as passing elements of experience, determines light as the formal material upon which and through which his work is concerned. When looking at the work, the observation of correspondence between light and darkness as a material form is confused. The darkness of light as much as the brightness of light temper being and fulfil a biological imperative for both.

Momentary Impermanence

In the Mendota Stoppages, James Turrell tested the notion that no moment in time is permanent; no awareness of any moment in time is more than a recollection or memory of a moment that has passed. Momentary impermanency after momentary impermanency is the perception of changing impermanence. It is through the interpreting of this sequence that the procession of experience is witnessed. That which is perceived has no life beyond the moment Turrell comments, “nothing we know is permanent... all exists only in shifting relationships with everything else - we have little to fall back on except ourselves, our own processes of being” (Turrell, 1980: 7). As such, known or unknown, recognized, or unrecognized awareness of experiences of light will always be created through the interstice, moment to moment. When the individual recognizes an experience but has difficulty speaking about the nature of the experience Louis Kahn called this descriptive

sensation “presences” (Kahn, 2013: 26) in relation to the environment sensed. This is a consciousness of biological response to light. Time and light are inextricably linked through different elements of consciousness. Peter Sellars has written about these considerations as moments transposed within the work of Bill Viola, he references Gertrude Stein when he suggests in his essay “Bodies of Light” that “each time there was a difference, just a difference enough so that it could go on and be a present something” (Sellars, 2003: 173).

Sequenced Moments

Every moment of life is changed from the former to the latter, Sellars suggests. It is just “enough” to be different so that it can become “a present something.” Each “present something,” is based upon the experience of a moment in time different from the previous one. Each is individual, distinct, and meaningful. Eliasson’s work recognizes this “just a difference enough” in the relationship between time, brightness, darkness, sound, and architecture. The relationship in which Sellars aligns to Bill Viola’s work and the repetition of the hanging droplets creates a reality of sequenced moments. This becomes the punctured passing of time in the relationship between the experience within an environment and the link between time and light. The capacity of the fountain to be photographed as a “present something” where the interstice of awareness between the un-noticed ways in which light and time pass in moments of “just difference enough” is profound. This profundity exists if “we recognize the exterior world with the pause button on, and (recognize) its interior workings (then the) ongoing processes begin to reveal themselves” (Viola, 2003: 186). Experience is a continual overlapping now. It is linked and ongoing, so when consideration is given to the notion of the “pause button” awareness is arrived at by unawareness of moments in time - holding time, by providing an experience of light that is paused. Eliasson’s invocation of these qualities means understanding that the passing of time is unbroken and inevitable.

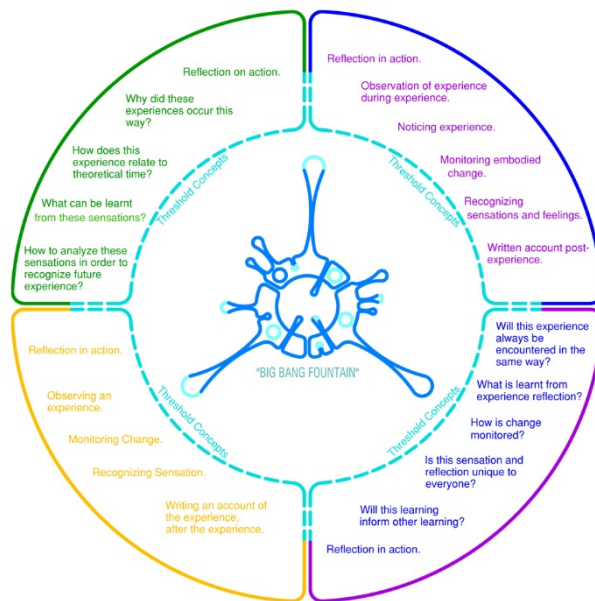


Figure 5. Methodology - In & On Action

The argumentation within this text is that bodies are aware of the interstice of time yet remain cognitively unaware of it. This presents as a “Threshold Concept” (Figure 5) where awareness of being outside of a linguistic frame steers an embodied methodological pathway. Individuals develop cognitive intuition of the object world through which they navigate their lives, such as an awareness of physical objects like the chair or the tree. However, light is not understood as a physical entity in the same way. Light presents a different cognitive intuition that many people are unaware of or only grasp occasionally in the way Kahn suggested. It, therefore, follows that being aware of the psychology of light when a conscious thought connected to light or time arises, what Husserl termed “monad” (Husserl, 1980: 26) is when the attachment of Being in the world, knowing the actual experience of the self as a connection to the “life-world” occurs. For Husserl, the individual ego was a central facet in the manufacture of cognitive experience, a conjugate between psychological egos,

through which cognitive representations of self are made, becomes an ego-centric experience. However, the ego through which the phenomenological experience of the environment is made is, for Husserl, a transcendental ego. The transcendental ego is based upon unknown, unidentified “eidetic memory” (Costa-Mattioli, 2008: 875), thus, the composition is formulated through shared biological history. Intuitive knowledge, which one could argue is sensed and not rationalized or cognitively constructed, is transcendental.

Combining pure ego and transcendental ego as the mechanism through which experience co-creates the notion of a now, or at least recognizes a sequence of time from which the idea of now is a centrally emerging component is important as time and light are inextricably linked; each exists within the realm of the other. The changes in light that alter environmental conditions are linked to time, distance, proximity, and light intensity, which open the observer open to conditions light manifest. These generate observational points of view. When Eliasson’s work is viewed from the point of view of perception, it must be close and enveloped within the entirety of the work or at the maximum distance the space of the gallery allows. These two points of view provide relatively different ways of seeing the work. Each way in which perception is gained generates vastly different perspectives on the experience received.

Viewing the work from the edges of the space is an experience of the whole work. Sensual perception of the work is the combination of being up close where the viewer can see nothing but the expanse of brightness/darkness/sound/flux and fluxus. Yet the space will only become apparent when the viewer moves or changes their point of view. These points of view combine and join, through which a status view is achieved, where a sense of what is being looked at can be processed cognitively. Perceptual movement within every architectural space is informed by proximity and distance in the same way. Within architectural space, the embodiment is in the light and, at the same time, distant from the light perceived. The perception of light on, in and through objects is concurrent to the recognition of shadow on the walls and the floors of architectural spaces. This encounter with light has the capacity to transfer an inexhaustible multitude of different qualities and sensorial characteristics within a single interstice of time. Light, time, and space recite continually changing and evolving scenarios of experience; however, awareness of this coexistence is often and easily overlooked.

CONCLUSION

This text makes a new contribution to understanding “Big Bang Fountain.” It creates new perspectives and pathways through which it is possible to acknowledge and navigate embodied experiences. The development of this original content draws much-needed attention to how and why encountering this work manifests such deep impact and suggests implications for the experience of light in architectural space. This study aims to create new results that interrogate the human relationship with time-light-space through philosophical debate and biological research. It connects diverse fields of study to say more satisfactorily how understanding space through sensorial encounter occurs. “Big Bang Fountain” has made awareness of this coexistence available. Experience of this work manipulates embodiment with the flux of passing time. It presents time as an extended encounter by introduction to the possibility of time being held static as an image of a moment; in this reflective encounter, we are able to examine and investigate.

The visual representation of this work carries with it all inherent future assumptions and reflective perceptions. Awareness that the work cannot ever recreate or repeat each passing moment may be present. However, it propagates the illusion of immeasurable, improbable moments of stationary time to come which is untrue. Reflecting upon this truth provides insight into the ever-changing flux of interstitial experience of architectural space. It draws attention to the passing of time and the importance of time as the arbiter of ever-changing spatial qualities of architectural space subject to light. Alongside this, it highlights the parameters through which time influences and guides the embodied perception of light. How we meet the essential flux in Eliasson’s work draws attention to the automatic, and mostly ambivalent way in which perception sense navigates passage through spaces we inhabit. Alongside this, and most importantly perhaps, it draws attention to the innate biological connection of interstitial experience of light variability in architectural spaces and the need to be less ambivalent to its biological importance.

Authors' Contributions

The author contributed 100% to the study.

Competing Interests

There is no potential conflict of interest.

Ethics Committee Declaration

Ethics committee approval is not required.

REFERENCES

- Bayne, T. (2012). *The unity of consciousness*. Oxford University Press.
- Bergson, H., Birnbaum, D., Eliasson, O. (2002). *Olafur Eliasson*. Phaidon Press.
- Bennet, S., Hayes, S., Uji, M. (2018). Stroboscopic vision when interacting with multiple moving objects: Perturbation is not the same as elimination. *Frontiers in Psychology*, 25(9), 1-6. <https://www.doi.org/10.3389/fpsyg.2018.01290>
- Brentano, F. (1966). *The true and the evident* (R. Chisholm, Trans.). Routledge.
- Brentano, F. (1995). *Psychology from an empirical standpoint*. Routledge Classics.
- Bullough, J., Marcus, D. (2016). Influence of flicker characteristics on stroboscopic effects. *Lighting Research Technology*, 48(7), 857-870. <https://doi.org/10.1177/1477153515599566>
- Costa-Mattioli, M. (2008). Switching memories on and off. *Science*, 322(5903), 874-875. <https://doi.org/10.1126/science.1167228>
- Dawkins, R. (1996). *Climbing mount improbable*. Viking.
- Eliasson, O. (2007). *Take your time*. M. Grynstejn (Ed.). San Francisco Museum of Modern Art.
- Eliasson, O., Kuo, M. (2018). *Experience*. Engberg-Pederson, A. (Ed.). Phaidon.
- Eliasson, O., Norretranders, T. (2015). *Light! On light in life and the life in light*. Forlaget Tor.dk.
- Foster, R. (2020). Light regulation of circadian rhythms: Fact and fiction and design implications. *Architectural Design*, 90(6), 66-71. <https://doi.org/10.1002/ad.2633>
- Godfrey, M. (2019). *Olafur Eliasson: In real life*. Tate Publishing.
- Husserl, E. (1980). *Phenomenology and the foundation of the sciences*. Ideas pertaining to a pure phenomenology and to a phenomenological philosophy (Klein, T., Pohl, W., Trans.). Martinus Nijhoff.
- Kahn, L. (2013). *Silence and light*. A. Vassella (Ed.). Park Books.
- Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching and assisting: A revision of Bloom's taxonomy of education objectives*. Longman.
- Lee, C., Joseph, L., Pak, H., Park, S.W & Song, D.W. (2018). Phantom array and stroboscopic effects of a time modulated moving light source during saccadic eye movement. *Lighting Research Technology*, 50(5), 772-786. <https://doi.org/10.1177/1477153517693468>
- Merleau-Ponty, M. (1962). *Phenomenology of perception* (C. Smith, Trans.). Routledge.
- Merleau-Ponty, M. (1964). *The Primacy of perception*. J. Edie (Ed.). Northwestern University Press.
- Merleau-Ponty, M. (1968). *The Visible and the invisible* (A. Lingis, Trans.). Northwestern University Press.
- Merleau-Ponty, M. (2004). *The world of perception*. Routledge.
- Moran, D. (2000). *Introduction to phenomenology*. Routledge.
- Perez-Gomez, A. (1983). *Architecture and the crisis of modern science*. MIT Press.
- Perez-Gomez, A. (2020). Mind in life in architecture: A conversation with architectural historian Alberto Perez-Gomez. *Architectural Design*, 90(6), 14-21. <https://doi.org/10.1002/ad.2626>

- Ricoeur, P. (2007). *Husserl: An analysis of his phenomenology*. Northwestern University Press.
- Sartre, J. P. (1995). *Being and nothingness: An essay on phenomenological ontology* (H. E. Barnes, Trans.). Routledge.
- Sellars, P. (2003). *Bodies of light*. Getty Publications.
- Tucker, W. (1975). *The condition of sculpture*. In M. Ryan. (Ed.). Gravity and grace: The changing condition of sculpture 1965-1975. South Bank Centre Publications.
- Turrell, J. (1980). *Light and space*. Whitney Museum of American Art.
- Ursprung, P. (2016). *Studio Olafur Eliasson*. Taschen.
- Veitch, J., Martinsons, C. (2019). Detection of the stroboscopic effect by young adults varying in sensitivity. *Lighting Research Technology*, 52(6), 790-810. <https://doi.org/10.1177/1477153519898718>
- Viola, B. (2003). *Passions*. Getty Publications.
- Wilkins, L., Gray, R. (2015). Effects of stroboscopic visual training on visual attention, motor attention, and catching performance. *Perception & Motor Skills*, 121(1), 57-79. <https://doi.org/10.2466/22.25.PMS.121c11x0>
- Zeki, S. (2009). In praise of subjective truths. *Journal of Physiology*, 587(12), 2825-2835. <https://doi.org/10.1113%2Fjphysiol.2009.170415>

Figure References

Figure 1: Notional dialogue in spatial process © Niall O'Hare, 2023.

Figure 2: Eliasson, O. (2014). *Big Bang Fountain*. ©Tate Gallery, London. UK. <https://olafureliasson.net/artwork/big-bang-fountain-2014/> (20.02.2023).

Figure 3: Eliasson, O. (2014). *Sketch for Big Bang Fountain*. ©Tate Gallery, London. UK. <https://olafureliasson.net/artwork/big-bang-fountain-2014/> (20.02.2023).

Figure 4: Shattering Bloom's Taxonomy of Learning © Niall O'Hare, 2023.

Figure 5: Methodology - In & On Action © Niall O'Hare, 2023.

Author's Biography

Niall O'Hare is a Chartered architect with the Royal Institute of British Architects (RIBA) and registered as an architect with the Architects Registration Board (ARB). He is a Fellow of the UK Higher Education Authority (HEA) and a Teaching Fellow in Architecture at the Belfast School of Architecture (BSA). Niall pursues an interest in the Iconography of Light, Architectural Presence, the Embodied Perception of Architectural Space and Architectural Pedagogy.