

Hungarian University of Fine Arts  
Doctoral School

# TRANSPARENCY

The Work of Light and The Light of Artworks

Theses for a DLA Dissertation

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Transparency is not only a physical, optical concept, but it includes the problems of cognition and identity in the field of epistemology – it consists the questions of correspondence and continuance between things and thoughts (representations). I refer to the function of the organ of vision and the perception of the world by transparency since it is in a tight connection with palpability and the duality of subject-object, viewer-seen, exterior-interior, passive-active.

In my DLA thesis I try to survey the perceptive qualities of the light, their biological (and physical) basics and appearance in contemporary fine art, first of all in James Turrell's works of art.

My thesis consists of three main parts thematically. In the first one I survey the cognitions in connection with quantum physics (the features of the light, its physical, astronomical appearance) and with some basic features of sight system in brief that belong to my subject tightly. After the two introductory themes I discuss my surveys with weak-sight people and their solutions. In the second part I select such a light art works only which reflect some way on the (quantum) physical features of the light, its cosmic, transcendent, metaphysical and philosophical kind or rather the mechanisms of seeing colours and light. I analyse some works of Péter Kiss, Attila Csörgő, Olafur Eliasson and Dan Flavin in detail. The last chapter is an approaching attempt to James Turrell's art. I present his light-installations as transcendental works together with presentation of viewers' special light- and colour-sight experiences.

## Thesis 1

In my thesis I survey among others that the beams can be approached from optical and geometrical optical point of view and we can use them for Physics and Mathematics but this approach doesn't correspond with the natural behaviour of sight system as we percept light and colours. The solutions of quantum physical surveys suggest that light is just one type of energy, code, information, potency and chance basically, which generates some reaction in different materials and agents and its first level appearance is the photon and the wave and corpuscle nature of the light. One of the problems is that photons create the light according to the physical surveys but it doesn't consist of them (same as the body doesn't consist of cells just it can be decomposed for cells). *"As if the photon doesn't convey the power effect specifically but it only conveys the message that the target object how should answer to the*

*power effect in question.*”<sup>1</sup> Richard Feynman’s seemingly simple (and hasn’t been proven yet) idea in connection with light vetos physical theories fairly dramatically; at the same time it reflects on the dilemmas of quantum physics.

The natural science survey of the origin of light drives to the darkest deepness of quantum physics. To that dark Universe of which 4% is palpable that is predominantly invisible and almost completely unfamiliar for us. We can survey only certain *features* (frequency, wave length, polarization) of the light, its real nature is unsolved because it is always observed as diffused, oscillated electro-magnetics energy. Heisenberg’s relation of irresolution is available for the light more increased because of its mediator nature.<sup>2</sup> „*There is something in the light that science isn’t able to disclose or reduce completely.*”<sup>3</sup>

## Thesis 2

By right of my surveys it seems that the act of sight (relationship between perception and cerebation) is unsolvable. It is culminated in that the body is a kind of state of consciousness which borders the other states of consciousness and obscures them. Among others that’s why there isn’t a reassuring theory of sight. The origin of light experience that comes off for the cerebation has got several layers and it can work out not only because of the affect of ordinary light. In this question present-day’s solutions of science have reference to definition of stimulus transmitting molecules in the association network of central nervous system and bioelectric function. Biological and spiritual functions of sight correlates with each other so the personal differences lie in not only “what” we see but “how” we see that. That’s why at present we haven’t known yet that the cerebation determines perception in the visual system till what – till thalamus, eye-nerve or the ganglion cells – since eye can be considered as a minimal brain from nerve physiological point of view.

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<sup>1</sup> Brian GREENE, *Az elegáns univerzum*, (ford. Gergely Árpád László), Bp., Akkord, 2003, 117.

<sup>2</sup> One of the principles of quantum mechanics which says that it isn’t possible to measure the certain observable alternates of a corpuscle at the same time with optional correctness – neither in theory.

<sup>3</sup> *Greeting the Light. An Interview with James Turrell* by Richard Whittaker, [www.conversations.org/story.php?sid=32](http://www.conversations.org/story.php?sid=32)

### Thesis 3

We know the instruments and the methods as well as the observations and their solutions that are necessary for surveys of colourful light physical law mainly by way of scientists' activities who has trichomat sight.<sup>4</sup> Nevertheless in my opinion objective analyse of colours is difficult because the answers of neural system – even till the appearance of sense of colours – are the same in functional anatomically relating to each colours. Only the cerebration divides them from each other. It makes difficult to measure light and colour (opposite the well-detected and traceable perception of shape and moving) that it is characterized solely by hard hedged in alterations of impulse. For that very reason the most complicated psychological questions of sight research arise in this field. Moreover, the secret of feeling quality of sight becomes meta-psychological problem and it is not easy *“to define how a given answer of the nerve system drives to a certain type of experience (for example to the colour) that is what stand between neural and epistemical characteristics.”*<sup>5</sup> The answer is complicated because *“the secret of senses doesn't lie in action potential or sinaptical attach”*<sup>6</sup> and psycho-physics uses the mental phenomenons as explanation in an inhibited way without knowing the nature of thinking (consciousness).

### Thesis 4

Can light carry more information than what we can see? I look for the answer to this question within the confines of an own survey. In pursuance of this survey I make experiments on blind people in connection with the perception of light. The brain can make the energy of light perceptible some way for want of the perceptive sensors (maybe with other sensors). Certain colours contain distinguishable energy-radiant scopes and levels which can be felt by weak-sighted people. The colourful light carries incomprehensible information (characteristics) as well for which the body (the nerve system) is able to react some other way. Without the concrete and “real” experience of colours the frequency of effulgence can be in connection somehow with that parts of the brain that work up the emotional effects, too, so the dissimilar coloured lights (invisible for eyes) have got specific perceptible character that also causes reactions.

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<sup>4</sup> In the human retina a receptor cell is found that perceives three colours.

<sup>5</sup> JULESZ Béla, *Dialógusok az észlelésre*, Bp., Tipotex, 2000, 278.

<sup>6</sup> Uo., 108.

## Thesis 5

The role and significance of different instruments that emit light increased a lot in visual culture and art after the millenary. In my DLA thesis I focus only on those works of art from the big set of fine art in which the anomalies in connection with light appears and those works which relate to biological functions of sight, optics, quantum-physics and the philosophical speculations of perception. These some illustrated example contains the following: the relation between visibility and the reality of things; the lantern and lightened; the light as object; dilemmas and instability of perception of light; the observability of the viewer's own sight; the possible models of space-obtrusive energy, the spatial state, move of electric charge and the transformation of energy-material. I analyse works in which questions undermentioned conceive: How do we percept that we look at? What happens to the light between two points in the space? Is it possible to distinguish from each other the vision of light that comes into existence by external effect or by internal reactions or by these mixtures? Do we see more, exactly that or less than that burst upon our view optically?

## Thesis 6

In James Turrells' works the qualia and Maurice Merleau-Ponty's phenomenology were the basis of my survey on colours and lights. Transcendent immanent of experience is in Maurice Merleau-Ponty's phenomenology that is inseparableness of the subject and object of the perception that changes and conforms continuously. Turrell tries to reduce to minimum the problem that the meaning of the vision is constituted in words that is the conscious experience before the linguistic act becomes the most important for him. In his work it plays an important part that he studied experimental psychology and he began to adopt psycho-physical laws of sight in his environments consciously together with its connections with perception of space. In the space that looks neverending, he makes an attempt to regulate and keep up the transient, natural light phenomenon. The appearing shapes are the solutions of sight illusions of the variety of light quality. In his installations – by right of my thesis – seeing the clean light help the viewer to the recognition that reality is an “objective reality” which depends on the subjective conscious.

## Thesis 7

According to the conclusions of my thesis, the mode of action of James Turrell's light works is dual basically. Either is staying of the common stimulus-inhibition function. Other is the effect of not an everyday light and colour experience (for example, the absence of the simultaneous contrast, special mixture of the light of the lamp and the Sun etc.) and the elementary experience of doubtfulness of the felt phenomenons what drives to the revision of the perceptive conscious. Turrell pushes the envelope at perception in cultural and psychological meaning what doesn't relate to art periods and stream. In his works (thereby they haven't got matter only have appearance we can percept) he reduce the distance for as little as he can between the purpose of the artist and the experience of the viewer. I came to the conclusion that relation of perception and thinking is modified by its installations in which the light has the main role: there isn't picture that could be identified by shapes so the perception of light becomes medium – the way of why and how we can see.

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