



Light, Lighting & Illumination in Transdisciplinary Meaning

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This paper recovers self-observation as means to revalue the way that we conceive light and lighting, taking into account that not everything in light is about quantifiable electric energy and sheer self-indulgence. Light gains significance as an inspiration to enchant the survival of a collective dream; as light that returns to the master beam of trans-perception. It transcends as provocative, irreducible, unpredictable, impossible to measure, in a permanent state of dissatisfaction. Light is sustained in its feminine nature, in constant struggle between the effective and the affective, measured in the border of logics and intuition, light, gas, the space volume of trans-discipline.

Keywords: light; lighting; illumination; trans-discipline; trans-disciplinary meaning, thinking, practice; to see; the included middle; the third included; intuition; place making, reading.

1 Introduction

We are witnessing a highly extensive array of changes that have taken place in societies, especially starting the 80's, and have shaped the line of events that influences one country to another, managing to erase distances and boundaries, establish new values and demands, modifying the system of consumerism and creating a new set of expectations and tensions that are embedded in the visual messages expressed by

the cities and gathering centers of current societies.

In consequence, the new modes of material and cultural consumption in these areas have produced a context that shows a transition from elitist forms of cultural production to new cultural phenomena that, rather than being determined by numbers, are shaped by nature and can be defined by the masses.

This path towards settling a new relationship between the culture of elites and knowledge that is accessible to the masses, is inclusive of sectors of society that were previously alienated from concepts of cultural interest, but are now given access through exhibits – particularly those kinds of exhibits that, pursuant to the language of communications, are increasingly being conceptualized as “events.” These initiatives have drawn great attention thanks to mass communication, and because of curiosity and discussion that they generate.

In the wake of these developments, we are experiencing the contingency of a new attitude that is perhaps not entirely palpable, but is grounded in the transmission of knowledge through trans-disciplinary practice and knowledge-making.

Visual communication media are being reconfigured by a modernization of space in which renewed plans of action have brought out a driving force that lays out a series of demands that can become significant beyond their capacity as cultural forms of knowledge.

The result is a new strategy for movement that en-

compasses multiple methods of cultural intervention that can be reconciled with scientific communication and decision taking. In this sense, these new modes of intervention ensure that the ethical and aesthetic values of objects and subjects can now be supported and appreciated by anyone in a circuit of gratification that is not attached to a specific time. This approach can be seen at work in an emergent area of knowledge-production that is anchored in light and illumination as essential means of communication.

This is happening not with the simple purpose of making the apparent reality visible, but rather, to attend to new demands of communication that require being displayed and presented in such a way that they can express feelings, emotions and meanings.

2 Lighting in the Transdisciplinary Practice, Knowledge and Vision

In this sense, lighting, as a trans-disciplinary practice, can not only make a fundamental contribution to the appreciation of a visual message that is set on an angle or point of view that considers outlines and colors; it can also elucidate the immaterial aspects of creation, the non substance of the most incredible and creative elements of its own interpretation. When we set the dimensions and establish a relationship between the illuminated object and the light that reveals it, *the included middle* comes into view, creating a terrain where the correct visual manifestation that appears through light not only evokes emotion, but also provides a key to comprehend what is exhibited or manifested. This can be perceived in any event that involves a method of visual communication in which light is manifested as an element that qualifies and configures the meaning that sustains it.

We can understand light in this regard not only as the manifestation that allows the physical visibility of things, but also as a means for the subject who sees to understand and think openly. This *third included*, transforms fact into experience and transcends from idea to intuitive feeling, this being the substantial foundation of the trans-disciplinary vision.

Under this light, the experience of visual thought leaves behind any structure of individualistic optic, generating a perspective of social projections that are unified to render an analysis of the common good.

The visual experience, which is surely not as considerable in terms of quality as it is in terms of quantity, is the vault that provides the greatest capacity to store the experiential knowledge that we acquire through life.

What do I mean by this?

Knowledge or, in other words, the data transmission phenomenon that occurs in the ordinary human condition, is, in one way or the other, introduced into our daily life in a highest percentage by visual experience.

If we know, it is because we *see*.

Vision not only implicates the physical experience of light that is cast on people and things, it is, even more so, the a-material element of understanding that allows things to unravel themselves, overriding fact with experience and experience with the interpretation of meaning, to progressively, through trans-disciplinary processing, transforming it into understanding beyond any risk or fear of mentioning in the creative consequences, manifested in love.

3 Visual Experience of Light and the Third Included

Paired to a high-risk attempt, trans-discipline invites us to think, liberated from the prison of the dualistic, bi-dimensional mind that is intellectual, logical, and pragmatic. The lived experience that is carried out through light is possibly, the most visible conductor of idea and knowledge transmission in which the presence of *the one who sees*, mentioned as the *third included*, is in consequence ineffable and infallible.

To *see* through light, can possibly provide the riverbed for trans-disciplinary knowledge.

We understand *seeing* not only as the physical visual exercise.

To *see* includes not knowing and not being able to describe what is seen.

To *see*, in this realm, becomes the trans-disciplinary action of sustaining a question that is previous to the answer.

In the analogy between the daily reductionist way of thinking and the trans-disciplinary outlook, lies a new utopia that runs throughout western culture

and dreams of transforming night into day. Trans-discipline, in this sense, is resonance and visual echo of the desire to transform the obscurity of pragmatic-material thinking into enlightened intuitive-humanist thinking.

Looking at the differences between language and races, social and political conditions, the luminous posture of trans-disciplinarity is the possible manifestation of an ideological common denominator of unity and cohesion between the territories of knowledge.

Comparable to light manifest in lighting, trans-discipline works in the same way for all and everything, activating the utopia to the highlights in the development of knowledge and creation.

The new social model of thought manifests the result of relationship between science and art, which in essence is the nature of light.

The utopia that was conceived by Jules Bourdais while attempting to illuminate Paris with giant lamps directed from the highest city point embodies a historical reference that is not considered as trans-disciplinary but responds to its effect and spirit. In this context, Jules Bourdais designed the *Tour-soleil* for the World Exhibition in Paris in 1889, to fulfill the dreams of a civilization that took up the endeavor of transforming darkness into light, forcing to eliminate any individualistic tendency and embrace an experience that amalgamated science and art, fused and confused in the vast and inexplicable intuitive experience of the emotional intelligence.

Current active sciences: math, physics, chemistry, economy, fused with energy, concept, expectations, dreams, hope, love, all manifest in light. But not only light displayed as electric energy in all its magnificence, even more so, the light of unification that is projected in the same direction of visual thinking and is enforced in the collective social experience. It is worth mentioning that this way of thinking does not recognize borders or territories of specialized property. It sets a relationship between the exterior and interior of the being under principles of inclusion, conjunction, and implication, recognizing and encompassing within this range, the reductionist postures of pragmatic logic.

In this direction, the visual experience of light is manifested as a catalyst and metamorphosis agent that generates a complex circular thinking in which cause and effect are the same in the lived experience toward the perception of *the included middle*.

An impressive idea turns into lived experience when light, as a luminous bearer, supplies the possibility of a conscious action of seeing that is invoked in the theoretical-narrative practice of Goethe when he comments, things exist because I see them, or when Nietzsche mentions that one exists through the eyes of another or when Gurdjieff affirms that I see, I see that I see, I see myself seeing that I see.

Antonio Gómez Yepes mentions that, in the trans-disciplinary perspective, a human being is conceived as a *Homo sui Transcendentalis*, a person who has been born again and whose potential is imprinted in the envision of his own being, including its own contradiction.

This is how light was imagined alternately as a continuous or discontinuous phenomenon, but never both at the same time. And so, the affirmation that light should be non-contradictory, whether it be continuous or discontinuous, was put in doubt.

Max Plank demonstrated, through studying the radiation of black bodies, that he could not become aware of the fine structure of energy without introducing in it an irreducible contradiction. Luminous energy is in a constant indecisive state that fluctuates between continuity and discontinuity, a state that should be labeled as a different concept.

This interaction is parallel to a self-contradictory-state, probably related to that current condition of believing in the “real” truth.

4 Effective and Affective Light Transmission

Rigor, openness and tolerance are three fundamental features of the trans-disciplinary attitude, which in direct analogy, correspond to three fundamental features of light, incidence, absorption, and transmission. The rigorous incidence of light projected onto an object, the aperture of light that is absorbed by the subject, and the tolerance to light that is transmitted onto the observer.

In most numerical practices, and in the pragmatic scientific study of light and consequently of lighting as well, the use of light is justified, quantified, and valued in terms of illuminance (the light that is projected) and luminance (the light that is cast and absorbed by an object). This reductionist scope leaves out any notion that the latter can only exist in the evolutionary visual experience of the *third included* (the participant that *sees* it).

Visual experience amplifies the dualistic phenomenon of projecting light and measuring the quantitative result by considering the active and conscious participation of the subject that sees what is seen illuminated before its own presence.

We can surely find in this contradictory state a relation to the current condition that relies on the effective and cuts off any form of affective display.

Light is related to the non-contradictory forms of sensations, feelings and values, such as doubt, freedom, etc, which are subjective experiences that can be perceived as contradictory.

Hence, before this paradigm, it is possible to see an opposition between the effective light and a distinctly affective light. This clearly positions that illumination is not only manifest in electricity or other sources of material energy, making us aware that light is manifest in the state, condition, and nature of things and people that exist in terms of the light they manifest in both realms of actions and thoughts.

5 Reverberating Light

In this process of trans-disciplinary light, Alexandre de Salzman illustrates the *included middle* as the *reverberating light* trans-disciplinary interpreter and mentions:

For us, then, light does something more than tell stories about the sun, moon and stars.

We do not demand of it that it produce effects.

Nor must it make things pretty, nor evoke moods. It must only give to colors, surfaces, lines, bodies and movements the possibility of unfolding themselves.

None of these elements should act at the other's expense, least of all the lighting itself, which should function as a binding force.

A "reverberating light"—that is what we seek. Needless to say, such light must fill all the space at hand, including both the audience and the performers. [7]

Light manifests a wonderful trans-disciplinary foundation by revealing itself in the *middle included* as its own manifestation.

Mentioned in another way, light includes a process of potentiated contradiction, making the definition of the classic scientific reductionist posture more flexible.

Light is the third force that manifests not only the optical visibility of the relationship between subject and object. It provides room for the sacred to be unraveled, for illustration, for creative thinking and non-permanence, enveloping all things that swing between the positive and negative poles of nature, and that are sheltered in their own energy, and in the presence of the *included middle*.

6 Light: The Trans-disciplinary Place-Making Thread

This framework, in which the included middle gains significance, is also responsible for the paradigm shift in our place-reading and place-making activities [8]. Trans-discipline does not abide by the classical notion of place as a complete separate entity from subjects and objects. It is more consistent with the idea that place is projected in the dynamic relationship between space, humans, non-humans, and things. The skill to read into place is not attained solely through methods provided by rational constructions of knowledge. It must also be pursued through intuition, imagination, and lived body experience to access the un-measurable dimensions of place.

Place-making, based on the absolute notion of truth that allows no contradiction, formulated hegemonic storylines that excluded the voice of non-dominant groups. In contrast, the *third included*, embodies the subject that is sentient to the multiplicity of realities that place unfolds. This manifold dimensional condition engages historic, social, physical, spiritual, and imaginary lectures and enables simultaneous and diverse narratives to coexist in the physical expression of place.

In the trans-disciplinary context, light becomes the element that strands together the multiple planes of being projected in all the intertwined dimensions of place. Light bears both allusion and illusion that are means of invocation and evocation. Light, in a trans-disciplinary context, not only accounts for historic identity, uses and interpretations; it is also adaptable to new meanings, dynamics, and interactions that

encompass distinct forms of alterity and reconciles past, present and future.

7 Conclusions

Lighting Design as a relatively new discipline, finds in trans-discipline a fertile ground to draw methods from other fields of study that can help co-create its base of knowledge, configure its value system, and validate its aesthetic-ethical tenets.

The trans-disciplinary perspective has given further meaning to light beyond its quantifiable attributes. Its manifestation is revalued as a phenomenon that threads multiple dimensions of time, place and being into narrative, changing the way we perceive and approach lighting.

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About the Author



Gustavo Avilés, (Mexico City, 1950). Studied Architecture at the Iberoamericana University from 1969 to 1974. Since 1984 he has been focused on Light in Architecture.

He is a leading Mexican Lighting Designer, lecturer, General Director and Founder of Lighteam Gustavo Aviles (1986), enterprise directed to Investigation and development of Architectural Lighting.

The dedication and purpose of developing a quality culture in architectural lighting, have conducted his trajectory to coordinate and teach in several Lighting Design courses (Post-Grade) in Mexican institutions, Mexico National and Autonomy University, Anahuac University, Iberoamericana University among other national and international Academic Institutions. He has been invited to lectures, courses, seminars and fairs in Milan, Portugal, Brazil, Argentina, Germany, Finland, United States and Greece.

His work achieves a wide variety of applications: residential, corporative, historical buildings, expositions, lighting master plans, landscape, among others. Some examples are, Design of Mexican Pavilion on the World Fair of Hannover 2000, Germany; Siebel Corporate, l'Etoile Rond Point, Paris; Chopo Museum, Mexico City; Lighting Master Plan for the City of San Luis Potosi, Mexico; Light Design Project for the Republic Senate, Mexico, City; Tlaxcala Modern Art Museum, Mexico; Perisur Mall, Mexico City.

He has collaborated with lighting design projects in association with Piero Castiglioni (Arch.) Milan; Maria J. Pinto Coelho (Arch.) Portugal; Carla Baratelli (Arch.) Milan; and Dieter Bartenbach, Austria, and other international lighting designers.

He has received in seven occasions the IESNA recognition Award of Merit Edwin – F. Guth Memorial for projects such as Jose Luis Cuevas Museum, Chapultepec Castle, The Flag Pavilion, TELEVISA, Master Channel Center, Sergio Hernandez Museum and more recently for San Luis Potosi Lighting Master Plan. In 2006 he received from IALD (International Association of Lighting Designers) Special Citation for Sensitive use of colour and Light to respond to architectural form. Also in 2006 he received the National Award for Art Creators in the discipline of Architectural Lighting Design, in the same year he obtained from IESNA the AILEEN PAGE CUTLER MEMORIAL AWARD FOR RESIDENTIAL LIGHTING DESIGN. In 2006 he wins the prize of the audience for a lighting atmospheric installation “ON EARTH AS IT IS

IN HEAVEN”, in the Lichtrouen International Forum for Art and Light design, this installation was presented in the old cemetery of the city of Ldenscheid, Germany. In October 2006 he obtains the third place in the category City People Light in LUCI PHILIPS Awards for the San Luis Potosi Lighting Master Plan.

Gustavo Avilés represents one of the professional and academic development line positions and he is one of the most enthusiastic on the National and International context. Hes member of Elda+, ACE, IESNA and founder of DIM with other Mexican colleagues.

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