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Mediations: from the representation of reality to the generation of the world

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Abstract

This essay is part of a wider investigation, which seeks to deepen the understanding of form creation in a comprehensive way. Although it takes the form of a look toward architecture and its relations to the world, this article provides different approaches emerging from the changes affecting socio-cultural context, scientific systems and technological tools, with origins in new forms of knowledge creation, the use of information and technology management.

Based on a series of questions, which include concepts from different disciplines, we consider the form and manner of representing it as a condition of its creation in architecture. We discuss processes (sensory experience and perception, dialogical experience and communication, cognitive experience and learning) which, on the one hand, have in common a generative character, and on the other, occur through interpretation.

The representation of reality, as a complex phenomenon, determines changes in the physical, social and cultural conditions of man, mediating the relationship between humans and their environments, and is interwoven in knowledge spatialization processes as a result of a generative process in which we all participate.

Keywords: form, processes, interpretation, transformation, creation.

1. Intentions

This study arises as a reflection on the concept of form creation, which has always had enormous importance in the architectural discipline. Architecture, in its current phase, is being redefined, analyzed regarding intervening situations, which are also being constantly redefined. The discipline is seeking to respond, on the one hand, to changing lifestyles and cultural societies and, on the other hand, to transformations of scientific systems and instruments of knowledge.

In this changing scenario, the concept of art as mimesis-representation of a prior reality, and of art as creation or production of a new reality, allow space for art as creation – transformation of a possible reality (or realities) – as a potential, contingent fact that may or may not act on the outside world, interacting with it, where, as Henry Focillon affirms, "from the moment it appears, form is liable to be interpreted in various ways" (1983[1943], p.11, our translation¹).

Far from establishing new theoretical formulations, the goal of this work is to identify new possibilities for understanding, with regard to the currently changing situation, through an investigation open to the variability of constantly changing fields of study. Uncertainty, complexity and multidimensionality are the current variables of an infinite series of nonlinear processes that occur continuously, and in which form is also a process in development. Through these variables, the fundamental concepts and systems of representation have mutated, introducing new ideas to which architecture as extension can no longer give form.

However, it is fair to recognize that it is from the world of architecture that comes the impulse, the instinct to locate reality, to support it with a network of elastic coordinates – nature itself is a network of networks, a network of relationships and interactions – creating new and more complex representation parameters, necessarily non-interdisciplinary but rather crossing boundaries; transdisciplinary.

2. Form as phenomenon in trans-formation

Form is not something man invents or produces, but something he allows to be, thereby becoming the very object of his representation. In this case, form can be defined as a relationship, as a set of possibilities in which the forms *are* not, but *become*, passing through interaction processes in which they are realized, altering their initial conformations and producing new forms.

All that has form carries information collected by the senses and transmitted to the brain: form is the medium of thought, and is generated from the interactions of the knowledge of each us, in a world that is continually generated. Information is what allows the human being to shape

¹ **From original in Spanish:** desde que aparece la forma es susceptible de ser interpretada de diversas maneras.

what he (re)cognizes and the interpretation(s) he makes of reality, and through his (individual and collective) history, creates the dimensions of his culture and a meaning for his existence.

It could be said, then, that man is an activator of reality, but there is no doubt that life itself begins and ends passively: we are born in a time and place that we do not decide, get sick and suffer, die, and worse, we are aware of this. However, it is a passivity that resolves into activity, into the ability to perceive and act while the process of transformation is begun, as a condition of existence, in the relationship with the "other".

As Edgar Morin explains in the first volume of his *Method* (first published in 1977):

'The idea of transformation means change of form, i.e. (de)formation, formation (morphogenesis), metamorphosis' (Morin, 1980[1977], p.187, our translation²).

He later adds:

'The *trans* retains and continues the idea of circulation and motion. And thus we reencounter the first characteristic of action: motion' (Morin, 1980[1977], p.89, our translation³).

Transformation is therefore a process triggered by each man, who achieves his realization through the representations of his actions on it, with the goal of developing and enriching the interpretation of processes.

These are the acts through which the medium has transformed, to create a new reality – a reality for which it no longer matters whether it is natural or artificial, interior or exterior, constructed or imagined, but that can be all of these, in an open process – a chance to give new forms to the initiatives of interpreters. Thus, representative and generative processes would be integrated in an interaction capable of producing new and varied meanings, where shape continues to transform in a process that never ends.

Morin continues:

'The observer is also part of the definition of the observed system, and the observed system is also part of the intellect and culture of the observer-system. A new systemic totality is created in and through this interrelation, which encompasses them both' (Morin, 1980[1977], p.170, our translation⁴).

Representation, then, is what underlies an individual's knowledge, and in this concrete case, the knowledge of form.

However, interpretation is what allows form to be unraveled, to be (re)presented in the infinite potentialities and transformations that may occur, conjugating perception: exchange of information with the medium, which recognizes form, communication: information exchange with another, who expresses it, and learning: the accumulation of information, which organizes it, all belonging to the same process of representing the world. Man actively participates in his

² **Translated from original in Spanish:** la idea de transformación significa cambio de forma, es decir: de-formación, formación (morfogénesis), metamorfosis.

³ **Translated from original in Spanish:** el *trans* conserva y continúa la idea de circulación y movimiento. Y así reencuentramos el carácter primero de la acción: el movimiento.

⁴ **Translated from original in Spanish:** el observador forma parte también de la definición del sistema observado, y el sistema observado forma parte también del intelecto y de la cultura del observador-sistema. Se crea en y por una tal interrelación, una nueva totalidad sistémica que engloba a uno y otro.

dynamism, and through it "forms are submitted to the principle of metamorphosis, which continually renews them" as stated Focillon (1983[1943], p.13, our translation⁵).

- **Sensory experience and perception**

Sensory experience of the reality around him enables man to receive data on the properties of his surroundings and is the first form of representation of the world around him.

As Gregory Bateson says:

'Perhaps it is at this abstract level that learning and genetics converge. Genes may influence how a particular animal will perceive and classify its learning contexts. However, mammals, at least, are also able to learn about the context' (Bateson, 1994, p.92, our translation⁶)⁷.

It is thanks to the brain that the human being can classify and correlate data (by similarity or difference) and transform these data into information.

Through perceptual experience - not sensory, but mental -- man begins to transform information, to organize and process it as forms, and can - trained to represent it as such - recognize and generate his very world through it.

Information is the essential element for generating, in humans, a consciousness of one's knowledge. This consciousness renders possible not only the process of representing objects but allows the representation of men as beings.

At this point, a foray into structuralism becomes necessary, and more specifically, into the structuralist totality as a nonpositive value: Structuralism is a combination or permutation scheme, equipped with an auto-closure, no matter how ineffably fluid and dynamic its processes are. However, Carlos Tapia Martín, in his recent book *Capturing Form with Forbidden Arts: Architecture and Form Creation for an Uncertain Beginning of the 21st Century*⁸, 2011, states that:

'Structures, it should be recognized, oppose extremes and establish mediation between them, devising a logical system that introduces the notion of relationship as the basis for the of thought mechanism, as Levi-Strauss himself asserts" (Tapia Martín, 2011, p.38, our translation⁹).

It can be seen therefore that knowledge is a generative process and there is no clear delineation between what man perceives from the outside and what he creates inside:

⁵ **Translated from original in Spanish:** las formas están sometidas al principio de las metamorfosis que las renueva continuamente.

⁶ **Translated from original in Spanish:** Quizás es en este nivel abstracto que confluyen aprendizaje y genética. Los genes pueden tal vez influir en un animal determinado el modo en que percibirá y clasificará los contextos de su aprendizaje. Pero los mamíferos, al menos, son también capaces de aprender lo que se refiere al contexto.

⁷ **The quote is translated from the Italian text:** Bateson, G., 1994. *Mind and Nature: Un'unità necessaria*. Milano: Adelphi.

⁸ **Title translated from Spanish:** *Capturar forma con artes prohibidas: Arquitectura y generación de la forma para un incierto inicio del Siglo XXI*.

⁹ **Translated from original in Spanish:** Las estructuras, es de reconocer, contraponen los extremos y establecen mediaciones entre ellos, ideando así un sistema lógico que introduce la noción de relación como base del mecanismo del pensamiento, como asevera el propio Lévi-Strauss.

knowledge of the world is his continuous creation, a product of interpretations of the subject, in its own respect in a process of construction, in a continuous exchange of information with objects and subjects.

The human being is in a state of permanent representation; in a continuous creation process, in which each subject shapes himself.

As Morin explains:

'The observed system is perceived and conceived by a cerebral system, which is part of a living system of the human sort, which itself is part of a sociocultural multisystem and is related ever more closely to the whole anthropo-social universe' (Morin, 1980[1977], p.170, our translation¹⁰).

In the observing subject, an internalization of the object observed is generated – an expression of the participation and of the active relationship of the subject with the creation of the object itself. This creation is always itself generative and interpretive. From the moment in which the subject recognizes the observed object, he is externalized and perceived as a property of the object and external to the subject.

This is the essence of perception – that it does not make explicit, but generates the world – where a man's life can be understood as an iterative process of knowledge, and where the "object" is not recognized as an object in itself, but as set of relationships which the brain receives and processes instantly: form is generated when you recognize the relationships in it.

However, the perceptual system is not based solely on sensory experience: man builds his perceptual experiences (memory), which once organized and processed condition his way of representing the world, in addition to having the ability to anticipate (imagination), through which he develops knowledge that allows him not only to discover, but to create new forms.

So the process occurs not only between external environment stimulus and information processing, but also taking into account the prior knowledge, memories and expectations of each individual, combining to create complex and different perceptions for all.

All these capabilities are formed during the interactions between living things and the environment, in the flow of reciprocal exchanges, creating a reality that is merely the set of perspectives and experiences that each individual acquires through life, in a continuous renewal of perception, which is, on the one hand, access to representation and, on the other, a layout of the world, at the intersection of the experiences and interpretations of "self" with those of the "other".

Perception, however, is not sufficient to understand the world, the meaning of which is woven in the intersubjective creation of reality, contributing to the development of thinking and being.

Communication is the condition for achieving intersubjective reality, whose interpersonal character allows for the *dialectical* exchange of information with other individuals who share a

¹⁰ **Translated from original in Spanish:** el sistema observado es percibido y concebido por un sistema cerebral, el cual forma parte de un sistema vivo del tipo homo, el cual está inscrito en un polisistema sociocultural y, cada vez más cerca, enlaza con todo el universo antropo-social.

common reality, each contributing their own point of view, rendering possible the recognition of the same experiences by different individuals.

As Michel Serres says:

'[...] the transmission of the knowledge, experiences and journeys in one's life does not consist only of teaching them point by point and one place after the other, but these trivial places must fit together in a global vision which embodies culture' (Serres, 1995[1994], p.14, our translation¹¹).

- **Dialogical experience and communication**

The dialogical experience – an essentially human reality, as a manifestation of subjectivity itself -- is what allows man to access the representation of the thoughts and experiences of others.

Through it, man is not only capable of receiving information from his environment and interacting with it, but can also exchange it with other individuals, transferring to them his knowledge about his relationship with the medium, in accordance with a mutually generative relationship, to establish a common ground for the sharing of human experiences.

In fact, the term communication in its etymology means "to divide", "share", and therefore it is not a process of transmitting information, but a process of interaction between subjects, elements, which is necessary for the constitution of society as a reality, as a sharing of newly generated knowledge.

In the dynamics of dialogical processes, organized information is that which allows communication as a balance between distinct beings, where the language expresses the will to achieve that balance, representing the desire to share one's thoughts and experiences.

So language represents one element in the creation of human reality – an element that allows one to confront and interpret said reality, establishing knowledge creation processes, characterized by individual thought processes, but socially mediated; subject to codes that enable communication and understanding, activated through dialogue, to establish connections between the thoughts and experiences of different individuals.

These concepts are found in the writings of Humberto Maturana, who states that:

'What constitutes us as living beings is the act of conversing [...] In the act of conversing, we construct our reality together with the 'other'' (Maturana, 1997[1991], p.334, our translation¹²).

Reality, then, is represented by the words we use to name it – the "reality of meaning" – in which dialogical experience is determined by the environment and communication processes are the product of the evolution and history of mankind.

¹¹ **Translated from original in Spanish:** [...] la transmisión de un saber y de las experiencias y viajes de una vida no consiste únicamente en enseñarlos punto por punto y un lugar tras otro, sino que estos lugares triviales, deben acoplarse todos juntos en una visión global, que encarna la cultura.

¹² **Translated from original in Spanish:** Lo que nos constituye como seres vivos es el conversar [...] En el conversar construimos nuestra realidad con el otro.

In communication, meaning is constructed, modified and transformed, according to the interpretive capacity of each individual and the ease with which the human being appropriates reality. It does not consist of the mere accumulation of facts, but of the creation of information on the reality that everyone observes, perceives and interprets, generating new data and information.

According to Umberto Eco:

'Information consists more of what can be said than of what is said' (Eco, 1972, p.58, our translation¹³).

He adds that:

'Information means [...] the extent of the freedom of choice within a certain system of probabilities' (Eco, 1972, p.66, our translation¹⁴).

It is communication, an active process that establishes the relationship between words and the world; through speech can one not only describe the world and reality, but also act on it, and above all, in a certain way, act on other individuals.

Moreover, communication is mediation between one's own thoughts and the thoughts of others and through it man enters the real and makes himself known to the "other" in the transmission of knowledge and lessons learned regarding the world.

However, it is not just thought that discloses itself or makes known its named reality, but it is the distancing from oneself – without isolating or renouncing oneself – in the search for otherness and for an opening to it, contemporary to knowledge – which is the act that occurs with communication–, developing its potential to be another.

Communication is necessarily interpersonal, and carries an essentially interpretative dimension: it is not simply an exchange of information, but an interaction between information, where the contribution of each interlocutor is essential to produce the new¹⁵ in the "other", where the meaning is not issued or received but is generated in a continual interaction.

Like interpretation, communication is an endless process, where meaning remains open to infinite interpretations and is generated as it progresses, in the continuous exchange of information, which allows form to manifest itself.

However, man lives in a world, in a representation of his own history, a joining of past and future, provided by a certain culture and language that determine his knowledge and interpretation of reality, which cannot be unique to each man, but shared by different individuals, for the construction of knowledge and, as Maldonado says, one must "avoid [...] the arbitrary assumption according to which we inherit our world, when in fact our world is our creation" (Maldonado, 1972, p.13).

¹³ **Translated from original in Spanish:** la información consiste más en lo que puede decirse que en lo que se dice.

¹⁴ **Translated from original in Spanish:** información significa [...] la medida de una libertad de elección dentro de un sistema de probabilidades determinadas.

¹⁵ Translated from the Spanish *lo nuevo*, "the new", meaning "that which is new".

- **Educational experience and learning**

As Morin says:

'In human society, with the formation of culture, individuals develop their skills in language, crafting, art, i.e., their best individual qualities emerge within the social system' (Morin, 1980[1977], p.131, our translation¹⁶).

So in the construction of human culture, achievements are passed from generation to generation through educational processes (learning), understood not as imitation, nor as a cumulative acquisition of prior knowledge, but as knowledge in construction, a development of the information exchange between people, assuming and generating, at the same time, its own historical legacy.

Evolution occurs when individuals integrate what they have learned and introduce it, transformed, into their own representations, thanks to the ability to transmit their own experiences to the next generation.

The history of humanity, in fact, is constructed through the interactions of human experiences and transmission of prior information, to which the cognitive process makes contributions to improve that which exists and define that which is new, where "existing" and "new" can coexist and mutually balance one another, as parts of the same process of understanding and knowledge construction.

To consider knowledge a process means to consider it dynamically and, consequentially, to transform the conception of learning, to understand it as a process as well, beyond the acquisition of knowledge or adaptation to a pre-established reality whose objectives are also in constant change.

In this perspective, the human being is in a state of continual education, building a socialization of knowledge, sharing skills that enhance learning and expand the powers of thought, establishing, in the interaction between individuals, bases for the development of culture, as they are able to transform information into knowledge.

The information is also of a multiple nature and constantly changing, in time and space, and it generates the new through the existing¹⁷, and its processing is the more profitable the more it is able to produce transformations that generate new knowledge, thereby weaving the fabric of culture.

In this sense, the human being is a process of creation in his way – a process in which the subject is the activator of his own knowledge, building a socially objectified reality parallel to his own subjective reality.

¹⁶ **Translated from original in Spanish:** en la sociedad humana, con la constitución de la cultura, los individuos desarrollan sus aptitudes en el lenguaje, en el artesanado, en el arte, es decir que sus cualidades individuales más ricas emergen en el seno del sistema social.

¹⁷ Translated from the Spanish *lo existente*, which means "that which exists".

It is society which must create the necessary conditions for individuals to build their subjective realities, fostering situations where they can share and create an objective reality – a world of meaning that each individual can attribute to that reality.

In the succession of changes that take place throughout the process, elements are melted down and individual terms – social, technical, environmental – merge, interact in an integrating view, highlighting the interactions and interdependencies in the creation of forms.

Culture is not owned, nor is it represented passively, but is created from the development of each individual in exchange with “the other”, where each person is able to extrapolate his own differentiation from others in an open and participatory process with multiple interpretations, contributing his expertise and learning to order be a human being; displaying reality, making the implicit explicit – becoming a creative process.

The representation of reality is therefore a very complex phenomenon, which involves not only individual skills but the interactions between men and between man and the medium, as well as specific techniques acquired through learning in its active form. In it, the generation of the world can be inferred from the interaction between the processes of perception, communication and knowledge of society, that is, from the shape of the world, in its cultural and social construction, where form is not determined by man, nor by the medium only, but arises and is created in the flow of their interactions; it the dynamic relationship between the two.

3. Extensions

It is assumed, therefore, that processes of representation occur through successive approximations, from the perceptive faculty, in the translation of information from the outside to thought, that transforms information in a process of understanding, involving communication, sharing knowledge with other subjects, in the dialogical experience that returns thinking outside, and finally reaching the creation of culture, which requires classification and organization of information, allowing the development of collective subjectivation in order to make sense of reality.

All this constitutes the human capability to generate representations of realities composed of actions and experiences in relation to the multiple interactions that can occur in them, (re)building a unity in which it is not possible to isolate each interpretation, but where processes of living are cognitive processes. They are not representations of the world but of its continuous creation, which contains within in that which is unfolding, where the subject is the builder of his own knowledge, from dynamic relationships and their social conditions, in his historical and cultural progression.

These concepts can be applied to all products of human activity, through experimentation and reflection on the possibility of an intelligence and of a connective creativity, designed to amend the fundamentals of world creation.

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