

PIOTR OPALKA\*

## INTUITIVE TENDENCIES IN ARCHITECTURE'S CREATION AND PERCEPTION

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### TENDENCJE INTUICYJNE W KREACJI I ODBIORZE ARCHITEKTURY

#### Abstract

Architecture as specific among arts in the most possible way connects beauty, durability, and utility. In a special way it merges often opposing tendencies such as intuitive and rational ones, constantly looking for creativity. Over the centuries both approaches to different extents decided on its creation and perception. Currently, at a time when the paradigm of architecture is subject to constant change, we are witnesses to the domination of rational thinking. It is visible most of all in more and more organised and unified management of design processes based on excessively extended regulations, rules, procedures and technologies. It seems then, that as a counterweight to this growing trends, the importance of intuition should be appreciated. This article is an attempt to define the possible role, significance and threats related to the intuitive approach in space creation.

*Keywords: intuitive thinking, rationalist thinking, intuition, perception process*

#### Streszczenie

Architektura jako szczególna pośród sztuk – bo najpełniej zespalająca piękno, trwałość i użyteczność, w sposób szczególny łącząc często przeciwstawiane tendencje intuicyjne i racjonalistyczne, nieustannie poszukuje kreatywności. Na przestrzeni wieków oba podejścia w różnym stopniu decydowały o jej powstawaniu i odbiorze. Współcześnie, w czasie kiedy paradygmat architektury podlega bezprecedensowym przemianom, jesteśmy świadkami dominacji myślenia racjonalistycznego. Jest to widoczne przede wszystkim w coraz bardziej zorganizowanym i zunifikowanym zarządzaniu procesami projektowymi, bazującym na ponad miarę rozbudowanych przepisach, regułach, procedurach i technologiach. Wydaje się zatem, iż w ramach przeciwwagi na nasilenie się tych tendencji odpowiedzią powinno być docenienie znaczenia intuicji. Artykuł jest próbą określenia możliwej roli, znaczenia, a także zagrożeń związanych z podejściem intuicyjnym w kształtowaniu przestrzeni.

*Słowa kluczowe: myślenie intuicyjne, myślenie racjonalistyczne, intuicja, proces postrzegania*

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*Isn't it depressing to realize that all the ugliness in our surroundings is a consequence of human intentionality and thought?!*

Juhani Pallasmaa

## 1. Introduction

According to the dictionary definition intuition (from Latin-insight, prompting, hunch) is *a direct cognition, not preceded by reasoning and not requiring additional evidence*<sup>2</sup>, related to the ability to predict, creative imagination, direct insight and achieving knowledge without the participation of observation and reason. It is also a *powerful stimulus, exciting the brain to creative effort (...), focusing things apparently dispersed and foreign into one*<sup>3</sup>. The interest in intuition dates back thousands of years. In philosophical terms, in Western culture circles it was dealt with by the ancient Greeks including Plato, later Spinoza and other European philosophers – Kant, Fichte, Schelling, Hegel, Jung. In Eastern circles of culture it is present in the traditions of Buddhism and Taoism (Krishnamurti, Osho)<sup>4</sup>.

In contemporary times research on intuition is conducted both in the frames of the natural sciences and humanities. As an integral part of human thinking, it finds practical application *in rapidly changing, complex, uncertain, and ambiguous decision-making environments*<sup>5</sup>. It is therefore one of the most important creative tools of space shaping, useful in complex cognitive tasks, such as *computations, abstracting, concept formation, judgment, decision-making, organizing, planning and problem solving*<sup>6</sup>. Thanks to *cognitive psychology*, we know that cognitive processes run on two interactive levels – intuitive (hidden knowledge) and analytical (conscious knowledge). Each of them ensures the construction of reality and the ordering of experiences. This type of double information processing is complementary and mutually irreducible<sup>7</sup>. **Analytical thinking** (rational) is conscious, targeted, analytical, controlled, based on principles, linearly reductionist and context. As the most developed and complex in humans, it also functions in the most developed mammals<sup>8</sup>. While **intuitive thinking** is characterized by unconsciousness, automaticity, speed, effortlessness, contextualism (table 1).

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<sup>1</sup> J. Pallasmaa, *Empathic and Embodied Imagination: Intuiting Experience and Life in Architecture* [in:] J. Pallasmaa, H. F. Mallgrave, S. Robinson, V. Gallese, *Architecture and Empathy*, Tapio Wirkkala Rut Bryk Foundation, Espoo 2015, p. 7.

<sup>2</sup> M. Bańko (ed.), *Wieki słownik wyrazów obcych*, Wydawnictwo Naukowe PWN, Warszawa 2010.

<sup>3</sup> S. Rudniański, *Technologia pracy umysłowej*, Wydawnictwo Naszej Księgarni SP AKC ZNP, Warszawa 1933, p. 180.

<sup>4</sup> M. Robson, *What is Intuition?* <http://whatisintuition.com/academics.html> (access: 02.05.2018).

<sup>5</sup> W. Agor, *Intuition and Strategic Planning: How Organisations Can Make Productive Decisions*, *The Futurist*: 23 (6), 1989, p. 20–24.

<sup>6</sup> E. Nęcka, J. Orzechowski, B. Szymura, *Psychologia poznawcza*, PWN, Warszawa 2006, p. 484.

<sup>7</sup> Hammond K. R., *Beyond Rationality: The Search for Wisdom in a Troubled Time*, Oxford University Press, Oxford 2007, p. 83.

<sup>8</sup> A. S. Reber, *The cognitive unconscious: An evolutionary perspective*, *Consciousness and Cognition*, 1 (2), 1992, p. 93–133.

Juhani Pallasmaa also points out two qualitative levels of imagination: *one projects formal and geometric images while the other one simulates the actual sensory, emotive and mental encounter with the projected entity. The first category of imagination projects the material object in isolation, the second presents it as a lived and experienced reality in our life world. In the first case, the imaginatively projected object remains as an external image outside of the experiencing and sensing self. In the latter case, it becomes part of our existential experience, as in the encounter with material reality, experiencing and sensing self. In the latter case, it becomes part of our existential experience, as in the encounter with material reality*<sup>9</sup>. This way of experiencing reality is close to Heidegger's poetic encouragement preferring intuitive thinking as closer to Nature. Because, in fact, we only realize a small part of the amount of work that the human mind does<sup>10</sup>, it should be presumed that using the potential of both ways of thinking will also have significant meaning in better space shaping.

## 2. Intuition and rationalism versus space shaping

It appears that both intuitive and rational thinking, not necessarily in opposition, can have a positive as well as negative influence on space shaping. Past experiences, present not only in the architect's technique, indicate their different participation both for an individual or a larger group of creators and its contact time. Art history may indicate their alternation in time. The participation of heart and mind in architecture's creation has been variable over the centuries, differently affecting the concept of beauty, durability and utility. Every particular style of development phases could be characterized with a different share of both trends. In the initial phase of each new artistic stream, the intuitive approach is dominant, creating an embryo for creative activities, discovering the unidentified, experimenting, and experiencing something new. However in subsequent stages of development – up to the declining phase, the contribution of the rational element grows. Only searching for a new artistic expression for expressing new ideas may be a leaven for creative activities. The barrier limiting intuitive tendencies could be increasingly consolidated, tested, codified and formalized solutions. Naturally rational tendencies of a given trend do not have to exclude the intuitive thinking of individuals.

Unfortunately, contemporary culture generally fosters purposeful and analytical processes that marginalize intuition, which is a consequence of *a Western culture obsessed with facts and science*<sup>11</sup>. This is clearly expressed by the sentence: *The intuitive mind is a sacred gift and the rational mind is a faithful servant. We have created a society that honours the servant and has forgotten the gift*<sup>12</sup>. Therefore, due to the contemporary imbalance in which reason dominates intuition, as a counterweight, we should lean towards a greater sense of mind.

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<sup>9</sup> J. Pallasmaa, *op.cit.*, p. 7.

<sup>10</sup> S. Epstein, *Cognitive-Experiential Self Theory, Handbook of Personality Theory and Research*, Ed. L. Pervin, Guilford, New York 1990, pp. 165–193.

<sup>11</sup> D. Cappon, *The Anatomy of Intuition*, *Psychology Today*, 26 (3) 1993, p. 40–49.

<sup>12</sup> Sentence attributed to Einstein, in fact popularized in the publication: Bob Samples, *Metaphoric Mind: A Celebration of Creative Consciousness*, 1976, pp. 26.

<b>Intuitive thinking</b>	<b>Rational thinking</b>
Learns directly from experience	Learns from abstract representations
Thinks quickly, primed for immediate action	Thinks slowly, deliberately, oriented toward planning and consideration
Holistic	Analytic
Closely connected with emotions	Separates logic from emotions
Interprets experience and guides conscious thoughts and behaviour through 'vibes' from the past	Interprets experience through conscious appraisal of events
Sees the world in concrete images, metaphors and stories	Sees the world in abstract symbols
Experienced passively and automatically	Experienced actively and consciously
Experiences events as self-evidently valid	Requires justification by logic and evidence
Pays attention only to outcome	Pays attention to process
Thinks in terms of broad categories and in terms of associations	Thinks in terms of finer distinctions and gradations and in terms of cause and effects
Operates in different modes according to emotional states	Highly integrated and more internally consistent
Changes slowly (with repetitive or intense experience)	Changes rapidly
Rapid information processing	Slow information processing
Simultaneous cue use	Sequential cue use
Judgement processes not retracable	Judgement process retracable
Logical rules unavailable	Logical rules available
High confidence in outcome	Low confidence in outcome
Low confidence in process	High confidence in process
Low cognitive effort required	High cognitive effort required
Reliance on non-verbal/pictorial cues	Reliance on quantitative cues
Emphasises right brain hemisphere	Emphasises left hemisphere

Table 1. Comparison of intuitive and rational thinking (adapted from: [6], [8])



III. 1. Optical correction in part of the Parthenon stylobat, Athen, photo by author, 2010

## 2.1. Rational trends

Rational thinking (from latin *ratio* –mind, *rationalis* – wise, reasonable) in architecture is associated with the conscious use of previous perceptual experiences and space shaping characterized by the logic of tried and tested solutions, based primarily on the technical sciences, taking into account functionality and economics. This approach can have a positive impact on the space shaping. It is difficult to imagine a well-designed urban space, without a logical communication framework and nodal points – market, city squares. In spaces without clearly defined rules, most often chaos prevails. Many well-designed cities, perfectly functioning based on centuries of experience, are currently facing a crisis due to a lack of analytical thinking.

However, the dominance of a rational approach can also negatively affect space, especially when the architecture paradigm is subject to unprecedented changes. An exaggerated legislative regime in shaping space, excluding the role of intuition, can lead to recurrence of the same solutions, resulting in monotony or the exclusion of fresh solutions. Moreover, rational thinking, absorbing too much of the brain's limited ability to concentrate, can paralyze creative activities. Sometimes we think too long to solve the problem, running complicated procedures. Therefore, it seems more important to appreciate the importance and role of intuition, also in architecture *the only real valuable thing is intuition. The intellect has little to do on the road to discovery* (Albert Einstein).

The disorder visible in the native landscape has established the foundations of rational thinking. The most important reasons include the increasingly organized and unified realities of project process management, where behind excessively developed regulations, rules, procedures and technologies, there are craftsmen, lawyers and administrative officers. The simultaneous marginalization of the architect's position in the design process eliminates the intuitive element. An example of such activity is the currently popular formula of investment implementation known as “design and build”, where at the stage of project construction, the architectural concept modified by another entity may be subjected to far reaching changes distorting the original ideas of the author. Intuitive trends are also currently limited by the governmental programme: “A Flat Plus”, where the most important criteria is price per square metre of living space, which negatively influences the quality of the architecture.

## 2.2. Intuitive trends – roles, trends, threats

In conditions of fast developing technologies and globalization, the intuitive reading of the past becomes particularly important, together with the social and economic processes and phenomena anticipating leading to the solutions to spatial problems. There are constant, multi-faceted and multidimensional observations of the surrounding world assigned to the architect's profession, naturally opened to intuition. They are coded as individual and complex events, objects and spatial relations. This is continuously accompanied by the unconscious gathering of messages that come from all the external messages, including sounds, images, relations in space and influences on our body (wind, temperature, humidity, pressure). Intuitive thinking is related to the decision making process. Among the factors that influence the decision making process individual qualifications and personal experience, psychophysi-



III. 2. Intuitive movement in the space of the Faculty of Engineering at the University of Pavia may take time (arch. Giancarlo De Carlo, 1972–1985), photo by the author, 2010

cal personality traits, access to information, as well as the type and complexity of the problem to be solved should all be mentioned.

Juhani Pallasmaa sees the real features of architecture not as *formal or geometric, intellectual or even aesthetic*, but as *existential and poetic, embodied and emotive experiences, which connect us with the deep human historicity of occupying space*<sup>13</sup>. People growing in a friendly, logical and aesthetic space naturally have a gift, thanks to which *some not yet noticed detail, some sentence heard or read by accident, develops like a wonderful seed in a whole tree of new thoughts; the things seen and known are renewed from the ground and viewed by the new eye*<sup>14</sup>. Much of this information affects the brain in an almost imperceptible dimension, often without its awareness of their perception. An example is subliminal perception, where visual or auditory stimuli are not deliberately registered because their duration is too short (up to approx. 0.04 seconds). Often they are also hidden among other more perceptible stimuli. This continuous training of the human mind transforms into the ability to read accurately complex “boundary conditions” being basis for creative activities in space. Intuition is therefore a skill that needs to be cared for and developed.

Intuition is often associated with the experience of a sudden flash (Eureka!), known from Newton’s Archimedes’, Einstein’s or Pythagoras’s groundbreaking discoveries are

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<sup>13</sup> J. Pallasmaa, *op.cit.*, p. 8.

<sup>14</sup> S. Rudniański, *op.cit.*, p. 181.

obviously misleading. Actually finding a solution to the problem or discovering an innovative idea would not have been revealed if not often preceded by years of experience and research, consciously or unconsciously staying in specific “tested” spaces. A premonition is not taken out of nowhere – empiricism *makes people aware of very strong underlying patterns that transcend a wide variety of decision scenarios*<sup>15</sup>. Similarly, designing is naturally attributed to the continuous observations of the surrounding world in its spatial shape as well as activities and experiences that are remembered in the form of individual and complex events, objects and spatial relations and can translate into practical activity. Undeniably, omitting the context, value, Heritage in Architecture should be considered as a factor increasing the probability of the occurrence of errors. “Generating” intuitive thinking must be preceded by a cognitive effort – the period of collecting, re-processing and verifying information in particular in the environmental, social, cultural, historical, ethical and aesthetic contexts. Crossing the limits of human capabilities with a limited computing and technological device had to be connected with intuition. The history of architecture has many examples of breakthrough constructions built in a previously unknown manner – from the discovery of the wheel to the construction of vaults and the entire spatial layouts of buildings.

Intuitive thinking, treated as related to instinct, is a function of the cognitive system inherited from our animal ancestors<sup>16</sup>. The world of fauna and flora for *homo sapiens* still remains the subject of constant admiration and a source of inspiration. Complicated buildings – nests, mounds, nets, patches, termites or anthills created by animals – birds, insects, fish, most often based on coordinated work, are an almost perfect combination of the Vitruvian triad.

Intuition, apart from the source of useful and often amazing insights, can also dangerously mislead us. This type of thinking can be presented as biased, unbelievable, dangerous, esoteric and mysterious because it is not regularly repeatable, readable, accessible and measurable. However, despite the fact that it is often considered as unscientific, irrational and unlawful, which can be suppressed due to fear of being ridiculous or may be subject to analytical “scientification”<sup>17</sup>. But it is natural – the first conceptual sketches or mock-ups are its first materialized form.

Threats related to intuitive thinking in architecture may be related to its formation and perception. We are still sensitive to a wrong assessment of reality, past events and misperceptions of our own behaviour. For example, for thousands of years, our ancestors steadfastly believed that the Sun moved around the Earth. Trust only in intuition can result in bad decisions in the context of the distorted interpretation of external stimuli. It’s just an illusion, affecting the senses of sight, hearing, touch, taste and smell, it is often a source of the misleading nature of intuition. Visual illusions, as the best known and understood, can influence it the most. The history of architecture indicates a number of solutions to prevent this. The ancient Greeks, aware of the importance of aesthetics, optically corrected entire buildings and their elements shapes and proportions (Ill. 1). Also auditory, tactile and olfactory illusions can

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<sup>15</sup> R. Bennett, *The Importance of Tacit Knowledge in Strategic Deliberations and Decisions*, *Management Decision*, 36 (9) 1998, pp. 589–597.

<sup>16</sup> Rationalistic thinking also functions in the most developed mammals – A. S. Reber, *The cognitive unconscious...*, *op.cit.*, pp. 93–133.

<sup>17</sup> W. Agor, *Using Intuition to Manage Organisations in the Future*, *Business Horizons*, 27 (4) 1984, pp. 49–54.

affect the perception of space – *designing physical spaces, we are also designing, or implicitly specifying distinct experiences, emotions and mental states. In fact, as architects, we are operating in the human brain and nervous system (...); environments change our brains, and those changes in turn alter our behaviour*<sup>18</sup>.

Intuition can sometimes lead to shortcuts and behaviour according to stereotypes. In particular, if we undertake to solve a task or problem for the first time. However, drawing conclusions from previous experiences, we can more critically assess her whispers and be more cautious.

Experiencing space can be more or less intuitive. A well-designed space does not require excessive effort and time to get to know it. Lack of intuitive sense in architecture or urban space is treated as malpractice. Nevertheless, spaces can be specially designed in a way that restricts the access of unauthorized persons to them. Giancarlo De Carlo in the Faculty of Engineering (1972–1985) at the University of Pavia designed a kind of labyrinth, in which the corridors are accessible from the staircase every third floor (Ill. 2). Those who are inside the building can see individual floors moved by a half storey. The facility is friendly and intuitive only for permanent users familiar with this space. Free and intuitive navigation around this object first requires getting used to it.

Despite the wide access to more and more perfect design tools, technologies and materials shaping the space of spectacular facilities – theatres, concert halls, and multi-functional rooms, their qualities may differ substantially. The scale of the difficulty of designing this type of object is demonstrated by contemporary spectacular spaces equipped with much more complex sound, ventilation and lighting systems. However paradoxically, other objects with similar cubature and audience capacity perfectly meet operational requirements, providing greater variability of audience settings as well as higher acoustic quality without excessive support from modern technology. Undoubtedly, the analytical approach in even the most complex objects` design does not replace the “sixth sense” here.

### 3. Summary

Good architecture requires balanced, “two-way” thinking based both on an intuitive and rationalistic approach. The lack of balance between analytical and intuitive thinking is the reason behind many negative phenomena in space. It is probably difficult or maybe impossible to find a *modus vivendi* defining the proper share of both tendencies in the search for architecture. Trust only in intuition without an element of environmental observation, experience, and acting on and expanding knowledge could lead to uncontrolled and not always positive results. Similarly, the final effect of strict trust in rules would be schematic and monotonous. However, the current imbalance between the two tendencies should lead to a greater sense of sentiment, trust based on activities, experiences and observations of the world surrounding us.

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<sup>18</sup> J. Pallasmaa, *op.cit.*, p. 6.

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