POLITECNICO DI TORINO
Repository ISTITUZIONALE

# Earth Morphogenesis: Signs and Interpretations

*Original*
Earth Morphogenesis: Signs and Interpretations / Pepino, Thomas. - In: IOP CONFERENCE SERIES. EARTH AND ENVIRONMENTAL SCIENCE. - ISSN 1755-1315. - ELETTRONICO. - 221:(2019), pp. 1364-1369. (Intervento presentato al convegno World Multidisciplinary Earth Sciences Symposium (WMESS 2018) tenutosi a Prague, Czech Republic nel 3 - 7 September 2018) [10.1088/1755-1315/221/1/012158].

*Availability:*
This version is available at: 11583/2779332 since: 2024-08-29T21:20:49Z

*Publisher:*
Institute of Physics Publishing

*Published*
DOI:10.1088/1755-1315/221/1/012158

*Terms of use:*

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

*Publisher copyright*

(Article begins on next page)

12 October 2024

IOP Conference Series: Earth and Environmental Science

**PAPER • OPEN ACCESS**

# Earth Morphogenesis: Signs and Interpretations

To cite this article: Thomas Pepino 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **221** 012158

View the article online for updates and enhancements.

This content was downloaded from IP address 130.192.43.106 on 14/01/2020 at 07:33

# Earth Morphogenesis: Signs and Interpretations

**Thomas Pepino** [1]

[1] Department of Architecture and Design, Polytechnic of Turin, viale Mattioli 39, Turin, Italy

thomas.pepino@polito.it

**Abstract**. Humans, since their first appearance on earth, act on the terrestrial crust by continuously interpreting and reorganizing the laws of nature. In principle, the operations they carry out are simple, they help to ensure a safe and secure place. In this geographical theatre, where anthropic actions follow one another in time, terrestrial walkways engrave and create hierarchies of the spatial components of this great mosaic. The first to rise are the ridge routes, without natural obstacles, able to guarantee control and safety from attacks, consequently those halfway up the coast with less difficult distances, and finally the valley floor routes mark the transition from nomadism to a stationary condition with a market-type economy. These flows, passing along the distances, connect river and sea routes, generate urban nuclei along the coastline and in the valley floor, connecting knowledge and knowledge with others. The outcome of the transformation process depicts man as the machine of the territory capable of acting on the earth's crust. In this image of human beings in search of shelter and protection, the archetypes that govern the disciplines of the earth arise: from the way of building to the primitive structures of aggregation. Man, defanging time, undertakes a long journey characterized by multiple actions that observe the past for the future, giving a new meaning to formal relationships between signs, promoting the encounter between semiotics and aesthetics. The analytical line that connects it to modern man, is the use of an endless intellectual reflection on the interpretations of the signs that the *physis* has transmitted over the centuries. This slow process of transformation gives space to a complex meaning, triggering a continuous cross-reference between sign and drawing. What emerges, is an anthropocentric context, where the anthropic structures are articulated in irreversible forms. The footprints left on the ground, erased and transformed by time are re-read and interpreted with the eyes of other disciplines, investigating whether the resilience of forms and archetypes are present. With the support of cartography, painting and psychoanalysis, we attribute different and possible meanings to the colours of this scenario.

## 1. Introduction

Since the first appearance of humans on earth, the earth's crust has undergone slow processes of transformation. Human beings, natural hosts, have operated over time through an immutable analytical line, anthropizing almost the entire territory [1]. In principle, the human being changes the surrounding environment, performs simple operations that guarantee him protection and safety against nature. In this image of man in search of shelter and protection, the archetypes that govern the disciplines of the earth arise: from the way of building to the primitive structures of aggregation [2]. On the basis of these premises, as inseparable presuppositions of the evolutionary system, we consider the city as a biological element, where the summation of the events of men's actions have subjected the laws of nature to favour a single component of the organism: humans. Assuming everything that exists as global, as *holos*, we can oppose the concept of the unity of the parts to the human being, as the key to the machine of the

Content from this work may be used under the terms of the Creative Commons Attribution 3.0 licence. Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.
Published under licence by IOP Publishing Ltd

territory. It follows that man is the only protagonist capable to operate in a predominant way on the earth's surface, fragmenting the unity into single parts. The continuous removal and addition of matter from the earth's surface has exerted an irreversible change on the *phyisis*.

## 2. Cartography. A psychoanalytic device for understanding urban transformations

To imagine these transformations, cartography becomes the tool for reading and controlling the footprints left by men. This mnemonic device, capable of specifying signs, traces and objects, recognizes the presence of these elements, even fragmentary, helping to reconstruct the settlement logic. By classifying diachronically the operations that have contributed to determining current spatial configurations, earth walkways, are part of the complex connective tissue that defines and describes the shape of the city. To understand the potential that cartography assumes during the cognitive process and later in the project, we imagine its activity as the concept of *setting* in psychoanalysis. The *setting* performs the same function as darkness during film screenings, it isolates from light, predisposes and contributes to better viewing [3].

Similarly, cartography itself holds all the conditions under which the isolation of the parts can be carried out. If the absence of darkness, as in our case is represented by the entirety of the map, the *setting* is not indispensable, but allows you to abstract from reality by distinguishing the elements necessary for the analytical work. During the *setting*, the external world is internalized through the *continuum* between figure and object. Consequently, the project that confronts the cartographic apparatus, will be the result of the external perception reorganized through our mental structure [4]. It follows that the organization of analytical work will have as its primary contribution the ability to organize and manage the information assumed by the territory through the chosen reading devices, without the obsession of a deep hunt for something that does not exist, but working on the depth of the surface of things [5].

### *2.1. Terrestrial metamorphoses. Anthropos vs Physis*

In cartographic representation, therefore, the ecumene assumes the form of the terrestrial space where man has extended until today, adapting himself, over time, to the surrounding environment, exploiting the soil to live, feed and reproduce. These *ante litteram* needs manifest themselves in reality, later they will find expression in the form of drawing, fixing rules that assume meanings, transferring objective and real knowledge that fixes the object of desire into paper [6]. The operations that these cards reproduce can be read by superimposing the events of the historical thresholds, choosing which factors must prevail over others. During this analytical comparison, the omission of objects is justified in order to highlight some characters, offering the possibility of reconnecting values and meanings of the settlement logic in function of the genesis of the places.

In redesigning the routes to understand the mechanisms that have led humans over the centuries to conquer the valley floor, we manage to prioritize the importance of some routes compared to others, perceiving in a precarious way how the orography is a fundamental component in the definition of the forms of the territory. Earth walkways shape the territory, divide and conquer the surface according to the achievement of progress. Within this geographical theatre, the first to emerge are the ridge paths. They were used to govern a place in relation to the surrounding environment, ensuring control over the valley floor and safety from enemy attacks. The view is clear and natural obstacles, such as waterways, are avoided. Subsequently, the mid-coast routes allow for less complex travel with easier distances. Finally, the conquest of the valley floor is marked by traces that determine the transition from a nomadic condition to a stationary situation of a strategic type. The market economy, passing along the distances, generates urban nuclei along the coastline, connects river and sea routes with others, ferrying knowledge and knowledge [7]. As Callimachus imitates nature by the conception of the Corinthian capital, this irreversible change, these traces, these signs of a constant passage of Man, are the elaboration of something already present, in which the close analogy between man and nature helps to shape an interpretation of the relationship between representation and reality, reflecting a precise intention. The representation of Mount *Athos* unequivocally represents anthropocentrism, the absolute power to decide on the destiny of nature, subjecting the earth to its own image and likeness. Man becomes God, his

elevation implies in the design itself the aesthetic representation of an idea, where form embodies structure [8]. Dinocrates, fixing inside the mountain the figure of the Man, the conqueror, anticipates the form of anthropocentric thought. The ability to govern the laws of nature discerns from this iconography, as a function of men's laws. The representation of Alexander the Great with water under his right arm, symbol of life, represents in a precarious way the man who organizes his destiny through the ability to modify matter, understanding however that nature and artifice must merge [9].
The land, used for the production of raw materials, was honoured through sacrifices to the gods in the hope of a prosperous harvest. Matter, from the Latin *mater*, product of the earth, vital element for the production of sustenance, connotes in it the concept of mother, mother earth, parent of goods of necessity for the human specie [10]. These lands, exploited according to the type of crop and consequently to the topology, bear many signs that can be traced back to the great project left by the Romans. The centuriation, based on schemes that the Romans used for the foundation of new cities, organizes and transforms the agricultural territory. Through these paths, the soil is designed and confined; it assumes its own law, regulates the forms in a geometrically controlled role whose signs, seen from above, relate to the nature of the places. In cartography, it is our role to grasp these memories, framing and representing in the process of analysis, forms capable of recovering the positive essences, taming nature with the same anthropocentric concept of the past.

### 2.2. *Contemporary genetics: metastases of a past*

The forms of the earth, as well as the outcome they have on the appearance of the city, we understood that they are assumed by learning with the continuing relationship in imitating nature. These forms have an archetypal root in concept and synthesis. The matrix is almost always traceable to a primordial plant, where in the process of re-reading and deconstructing the territory they are codified, represented and designed [11]. If we consider the settlements scattered along the coasts of the Mediterranean, in the islands or in the hinterland of the Middle East (Palestine, Anatolia, Mesopotamia, Syria, Jericho, etc.) as atavistic models, of necessities such as caves and quarries, we can see in the representations and descriptions produced by travellers of the 18th century onwards, ways of living and rules conceived in the past and present up to the present day.
During the *Grand Tour*, some famous personalities such as J.W. Goethe, J.P. Houël, K.F. Schinkel, E. Viollet-Le-Duc, visited, described and represented some Mediterranean places, consciously and unconsciously confronting themselves with three archaic themes: the zenithal relationship, the horizontal reading device and the hypogean system. What we can learn from some of these drawings is the condition of a *setting* capable of analytically reconstructing the process of configuring the space. The drawing illustrates and represents in a complete way those primordial signs deriving from archetypal models. The figure of Jean Pierre Houël, specialized in the representation of landscape, codifies elements that the author defines *curieux* in a series of information coming from the territory [12]. The association between text and figure generates a broad view of the city, where the ruins of walls, bridges, aqueducts, wells, tombs and quarries, eroded by time, are revealed on paper in their entirety, identifying the nature of the places [13]. With the help of pictorial representation techniques and technical drawing, Houël captures archetypes and manifests the *genius loci*. The painter's gaze, analysed posteriori through the illustrations, is a gaze that still exists in function of a progress that looks at the city from the city [14].

### *2.3. The third eye. Towards a representation of the city*

Similarly, the gaze produced by Rene Magritte draws on a semantic language in which the relationship between object and subject becomes the emblem of interpretation. Magritte, one of the most important surrealists of his time, studied and interpreted the customs of a society in its rapid change. In most of his paintings, the human being is faced with some questions of fundamental importance: who are they? What do I see? What is the meaning? In the same way that Magritte imposes the resolution of a psychological *rebus* through images, the earth, in its cartographic representation, stimulates the mind by identifying and giving a name to the elements of the world, forcing our retina to reflect to the brain an

image that sprang from internal intellectual reflection [15]. The earth speaks and the city changes so fast that the four-dimensional physical theories come into play in the devices used for the design reasoning. If in the past the classical conception of space was expressed in a linear way through Cartesian spatial coordinates, in the representation of places of the real city, the one we live in, as in Magritte's drawings and in the reconstruction of the missing parts of Houël's illustrations, the components in the field are multiplied by the psychological work of the observer. I observe from above, from left, from right, making the temporal vision of before and after view different according to the observer's context and cultural conditions. This *mixité* of actions aimed at the reading of places and its architecture, is the sum of a logical reasoning that divides the space-time and combines the forms of the past with the traces of the present for a project still to be realized. In observing maps, the solution of continuity between past and present is usually read in its historical development, in a unilateral way, based on an understanding of the anthropic processes that follows a well-defined chronology. One must, however, reflect on the fact that unilateralism during the redesign of the cards is the stratification of the differences of wide-ranging contemporary actions, present in the same place with a denominator, time, which is not the same for all [16]. We, as designers of the earth, must interpret the signs and memories through a pattern that is transformed into architecture. A process of synthesis and choices that should only be done by reading the territory in order to complete the *continuum* of the past, giving meaning to the dead parts of the earth.

### *2.4. Krónos: the way of light*

The change of perspective that must be pursued in order to observe the facts of reality, inserting reflections that often cross over into other types of knowledge, offers a different vision, while the current circumscription faces a single aspect of the project. The process of unveiling through - almost passive - observation brings knowledge. Therefore, the passivity of the observer is initially an informative condition of the observed data starting from the relationship between the observer and the observed object. Knowing that in the project, the mind observing the spaces is never a neutral mind, the quality of the project depends on an emotional map of the observer, understood as the relationship with the lexicon of the references observed in the object and what they awaken in him [17].

In Houël's representations, experience is derived from a cognitive process aimed at capturing aspects of nature. His discovery, knowledge and representation, places him in his long journey, to confront the theme of the ruin, drawing and painting what is real in the idea and in the poetics of the *pittoresque*, in which the evaluative judgment of beauty is simply given by nature. Subsequently, the interpretative process will start in his mind, which after a metabolization of the forms of nature and the work of Man, will succeed in making visible, from the confusion of time, an image at the limit of photography, whose register reconstructs on subjective experience an analytical reconstruction of places, revealing something that in retrospect has been proved to be correct in most cases: penetrate into the forms and represent the structures by forms.

### *2.5. Signs and Meaning in Design Behaviour*

Let's ask ourselves what is necessary for the creation of a project starting from cartography. First of all, it's important to establish rules that can repeatedly clarify objects taken from the territory, thus avoiding the production of fine elements for themselves, which if not required by ephemeral events would distort the rationality with which the forms become the predicate in the territory. Secondly, the selection of the meanings that the chosen references produce in the communication process through their representation. This meaning is attributed by the designer on the basis of what the elements of the earth mean for him, interpreting them as such, with the aim of reading the passage between sign and object for the formulation of a reinterpreted function that distinguishes between model and new referent [18]. A stream, a wall, a series of walls, terraces, a hypogean system, etc., they all determine a sign with known rules, they become the exchange of information in the cartography for the elaboration of new codes, stimulating an interpretative response of the present for new images [19]. <<Art does not reproduce the visible, but makes visible>> [20]. Paul Klee thus helps to affirm that analytical activity, in any field, as in architecture, is already operating in terms of design. The destruction of forms, as dead elements on

the ground, seems to annihilate the usefulness that the primordial figure assumes, but without this necessary passage there would be no new form, no new paper, no new project [21], consequently "the internal movement of the work acquires importance rather than its final formulation" [22].

### *2.6. Design activity and the dream machine*

Freud, in his famous book "*The interpretation of dreams*", explains that to understand and know the unconscious, one must study mental functions by specifying a descriptive-functional framework and that the primary way lies in the interpretation of dream activity. Consequently, in order to achieve the improvement of the discipline, the practice of psychoanalysis, as well as project analysis, is the mechanical act capable of accurately tracing the set of values that underlie the dream and cartography [22]. Dream activity, like project activity, unravels a system of references between the state of fact and the project, attributing different functions during the analytical phase. Like psychoanalysis, cartography is part of that dreamlike activity where the set of values and design prepositions that are tracked down mechanically in the project. Freud illustrates a series of dreams capable of manifesting through their interpretative process a desire for fulfilment. When we reason in cartographic terms, the structure of the map leads to the search for something, this something is analogous to the process of unveiling, in which the act moved by the desire to be satisfied manifests itself between mind (psychic activity) and sought form (theme), with the unconscious awareness of the fact that what we are looking for is in our head, but we still cannot see it. In the analytical process, we penetrate the state of things, we divide the manifest content, the state of fact, from the latent content: the references for the project [23]. The rewriting of the dream for its interpretation, like the rewriting for the definition of a thematism, are part of those activities that can manifest and signify the different objects present in the dream system as in the cartographic one. To use a latinism, *Ars est celare artem*, through this concept we prefigure in cartography the ability to conceal instruments, integrating a subtle erudite work in the project. We disguise to be able to see, it represents almost the antinomy of Klee's formulation but it potentially contains the same symbolic meaning. If we try to repeat the design process that gave rise to the project developed by the previous assumptions, will we not find that the interpretations are nothing more than the obvious result of meanings that respond to the desire for satisfaction? When we observe cartography to determine a project derived from morphology, being itself a material derived from the fragmentary latency of temporal elements reinterpreted by our experience, can we not assume its content as the relationship between dream activity and its representation? Does the comparison between dream memory and the signs of the earth's crust not lead to the result that it is imagination that completes the disjointed and initially meaningless fragments in an authentic act that establishes the logic of the territory [24]. Magritte, Houël, Freud and Klee do not implement a very similar analytical process in the forms of their language?

## 3. Conclusions

From this text, the presence, even if brief, of some figures belonging to different disciplinary fields, represents the complexity of man's thought in acting within the great Earth system. These figures offer a possible interpretation of the objects of nature, bringing the architecture closer to the territory. "Looking at the city from afar" [25] as the psychological enigmas of Magritte's *rebus*, places us "beyond its consolidated and historicized reproductive mechanisms, where they are cracked and no longer inexorably represent society nor the space of the city inhabited by contemporary man" [25]. With a transversal, different gaze, the psychoanalytical instrument employed by Freud to interpret dream activity, "it means for us to impose ourselves to investigate analytically the distant reasons of the logical construction of settlements that come from the shape of the Earth, from geographical and geomorphological characters" [25].

## References

[1] S. Muratori, "*Vita e storia delle città*", in "Rassegna critica di architettura", n. 11-12, 1950, pp.3-52

[2] M. A. Laugier, "*Saggio sull'Architettura*" ed. Aestethica, Palermo, 1987, pp. 47-49.
[3] F. A. Flegenheimer, panel intervention October 1986 Psychoanalytical Center of Milan, in Nissim Momigliano L., 1988, *"The setting: theme with variations"*, in Journal of psychoanalysis, 1988; XXXIV; 4, p. 609.
[4] D. Meltzer, *"La comprensione della bellezza"*, ed. Loescher, Torino, 1981, p. 273.
[5] H. V. Hofmannsthal, "*Il libro degli amici*", ed. Adelphi, Milano, 1980, pp. 48-59.
[6] S. Freud, "*L'interpretazione dei sogni*", ed. Bollati Boringhieri, Milano, 1997, pp. 130-140.
[7] G. Caniggia, "*Strutture dello spazio antropico*", ed. Uniedit, Firenze, 1976, pp. 187-194.
[8] L. Wittgenstein, "*Ricerche filosofiche*", ed Einaudi, Torino, 1967, p.66.
[9] V. Ugo, "*Mimesis: sulla critica della rappresentazione in architettura*", ed. Maggioli, Milano, 2008, pp. 7-10.
[10] F. Espuelas, "*Madre materia*", ed. Christian Marinotti, Milano, pp. 11-14, 2012.
[11] V. Ugo, "*Mimesis. Sulla critica della rappresentazione in architettura*", ed Maggioli, Milano, 2008, pp.30-38.
[12] F. G. Pantano, "*Avola, Cava Grande e Vendicari nel Voyage in Sicilia di Jean Houël*", 1776-79, ed. Ediprint, Palermo, 1995, p. 5.
[13] J. P. Houël, "*Il Viaggio in Sicilia 1776-1779"*, ed. Edizioni di storia e studi sociali, Milano, 2013 p. 18-19.
[14] S. Russo, "*Il viaggiatore curioso. Lettere di Denon e Houël a Landolina*", ed. Marsilio, Palermo, 1993, pp. 38-39.
[15] M. Paquet, "*Magritte*", ed Taschen, Colonia, 2015, pp. 23-47.
[16] H. Focillon, "*Vita delle forme. Elogio della mano*", ed. Einaudi, Torino, 2002, pp.84-88.
[17] V. Ugo, "*Mimesis. Sulla critica della rappresentazione in architettura*", ed Maggioli, Milano, 2008, pp. 12-13.
[18] A. Ponzio, S. Petrilli, "*Semioetica*", ed. Maltemi, Roma, 2003, pp. 34-35.
[19] U. Eco, "*Trattato di semiotica generale*", ed. La nave di Teseo, Milano, 2016, pp. 29-30.
[20] P. Klee, "*La confessione creatrice*", in "*Teorie della forma e della figurazione*", vol. 1 a cura di Jürg Spiller, ed. Feltrinelli, Milano, 1959, pp. 76-80.
[21] G. Motta, A. Pizzigoni, "*La nuova griglia politecnica. Architettura e macchina di progetto*" a cura di R. Palma, ed. Global Print, Milano, 2011, pp. 273-274.
[22] S. Freud, "*L'interpretazione dei sogni*", ed. Bollati Boringhieri, Milano, 1997, pp. 7-9.
[23] ivi, pp. 263-265.
[24] U. Eco, "*Trattato di semiotica generale*", ed. La nave di Teseo, Milano, 2016, pp. 121-123.
[25] C. Ravagnati, "*Dimenticare la città. Pratiche analitiche e costruzioni teoriche per una prospettiva geografica dell'architettura*", ed. FrancoAngeli, Milano, 2008, p. 149.