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General Presentation

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EDITOR'S NOTE

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- 1 **The title “The Life of Forms” is taken from a book by Henri Focillon, a work which he published in 1934 and devoted to the work of art. “The work of art”, he wrote, “is an attempt at the unique, it asserts itself as a whole, an absolute and, at the same time, it belongs to a system of complex relations.**
- 2 The work of art is the measure of space, it is form and this is what must be addressed”. In one of his political treatises, Balzac wrote: “All is form, and life itself is a form”. Focillon added: “Not only does every activity allow itself to be discerned and defined to the extent that it takes form, that it inscribes its curve to space and time; life itself acts essentially as a creator of forms. Life is form, and form is the mode of life. The formal relations within a work of art and between works of art constitute an order, a metaphor of the universe”.
- 3 After looking at a first definition from the philosophies of Plato and Aristotle, we will examine:
- 4 • the mathematical definitions of form;
- 5 • the physical origins of form;
- 6 • the first life forms, their phylogenesis and, in the case of superior species, their ontogenesis;
- 7 • finally, the interlocking of the forms of the brain, which will serve as a transition towards mental forms and social forms.
- 8 We will conclude on what has served as our starting point, the work of art with André Chastel's *Fables, Forms and Figures*.

I. Firstly, what is a “Form”?

- 9 The Encyclopedia asks the question “what does form consist of? In what degree of movement, arrangement, situation and configuration of its smallest parts does the form of each body lie?” Form would therefore be defined as an organization of simple elements in space and time. But from where, then, does it come? What is the origin of these organized forms in the world around us? I will broadly distinguish between two main theories:
- 10 1- The first defies the canons of scientific method, calling upon natural theology from Plato to William Paley or abbé Pluche: here forms are understood as non-material, non-physical and extra-mental abstractions, “essences”, created by a “demiurge” or a “great watchmaker”. According to Plato, they are located *hyperouranios topos*, meaning beyond the heavens... These ideas are resurging nowadays among the supporters of “intelligent design”.
- 11 2- Another definition, relates to scientific explanation and is based on historical causation. It “consists in breaking down systems (at any level) into their parts and in identifying the regularities which characterize them by relating them back to theoretical principles that are as general as possible”.
- 12 This takes us back to the atomists of Ancient Greece – Leucippus and Democritus – and the idea of a “principle of construction” of forms, rather than the revelation of a pre-existing form. In other words, “the appearance of forms” – noted Democritus – “stems from attempts which bind atoms to one another” according to random contingency. This brings us to a general model (II).

II. The Darwinian Model of the Genesis of Forms

- 13 The Darwinian model adds a dimension of “historical causation”. The phenomenon is situated in space and time within a temporal series of causes and effects. It focuses on the stratification into levels of organization and on the transition from one level of organization to another, regardless of the level. The hypothesis is that the transition from one given level to the next requires two fundamental elements: a generator of diversity and a selection process.
- 14 1- The generator operates in the following manner: the elements combine with one another in a stochastic way, “transitory forms” are constructed which can correspond to the immediately superior level of organization. It is important to highlight that these forms are created from elements that are already structured (not necessarily atoms) and originate from the level below. There is a production of “Darwinian variations”.
- 15 Another fundamental element:
- 16 2- A selection process stabilizes certain variations, while the others are eliminated. New variations then appear with the “telescoping”, “interlocking” of successive levels of organization, and so on.
- 17 Finally:
- 18 3- The general selection model calls an additional notion into play: that of a function we can describe as being the real effect of form on the physical, biological, social and

cultural outside world. This notion manifests itself, in particular, through feedback on the stabilization of the form which moves from being transitory to being stable.

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