

Lecture Notes in Morphogenesis

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Metamorphosis



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The term derives from the Greek word *μεταμόρφωσις* (composed of *μετα*, prefix indicating the transformation, and *μορφή*, “form”) and has two closely related meanings.

In ancient mythology, it is counted among the extraordinary phenomena called *paradoxa* or *mirabilia* since they seem to escape natural laws (Citti and Pasetti 2014: V); more precisely, it indicates the (temporal or permanent) process of BODY changing. This transformation can be ascribed to intrinsic abilities of creatures (e.g., the marine divinity Proteus was famous for his transformations) but also to divine or magical interventions. Examples of morphological transformations can be found in classical literature: in *Odyssey*, Homer granted the sorceress Circe the power to transform men into animals (Homer 2014); the Latin poet Ovid collected about 250 stories of shape shifting in his *Metamorphoses* (Ovid 1958; see also Ščeglov 1969) and Apuleius’s *alter ego* changes himself in a donkey in the novel *The Golden Ass*. (Apuleius 2004) In these stories, the theme of METAMORPHOSIS is a way to investigate the established boundaries between gods and mortals, humans and animals, animate and inanimate; in the same way, in contemporary literature, METAMORPHOSIS is—under the psychoanalytic aspect—the expression of desires or sanctions that emerge from the unconscious (i.e. *Die Verwandlung* by Kafka (Kafka 1961)).

In zoology, instead, the term indicates the set of morphological and physiological changes characteristic of some insects and amphibians and implying a different relationship between organism and environment.

In both cases, the mystery of METAMORPHOSIS is played between formal alteration and continuity: hence, as Goethe stated, morphologists wonder about what differentiates METAMORPHOSIS from the constant, unregulated, and unlimited “pass away” from one FORM to another one (Goethe 1955; see also Breidhbach 2006; Cappelletto 2002; Lupo 2015; Trauben 2005) (see LIFE). As the eighteenth-century morphologist

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Burdach underlines METAMORPHOSIS is a change that concerns only some “fluctuating traits” and preserves the common quality among different phenomena (Burdach 1817: 25). In fact, both in scientific and literary fields, it is interpreted as “dissimilarity with similarity,” (Didi-Huberman 2002: 99) as a change that carries within it the traces of permanence (Guglielminetti 2000). In other words, in every kind of METAMORPHOSIS, there is a common trait between ancient and new FORMS, an attribute that can be found in spiritual bonds, but also in material constraints (Guglielminetti 2000: 23 ss.; Ščeglov 1969: 145). In fantastic literature, the metamorphosed subject maintains human rational faculties (i.e., King Licaone turns into a wolf as a punishment for his badness, but maintains human soul); on the other hand, he can undergo a purely material change, without altering the SHAPE that makes him immediately recognizable (this is the case of Pinocchio, whose wooden figure is transformed into “flesh and blood” body by the Blue fairy (Collodi 2000)).

In the biological sphere, the common trait of BODY structures is imposed by ORGANIC material properties which establish specific commutative rules (Thompson 1961) and generate morphological tendencies linked to the phenomena of *body modularity*, *hierarchical interdependence* of organs, and EMERGENCE. The individual or species METAMORPHOSIS is therefore linked to the concept of *constraint* (Riedl 1978; see also Tedesco 2012) or *negative freedom* (Berlin 1958).

It is precisely this “conservation of the identical” that allows us to grasp the subtle difference between the logical categories of *transformation* (central to the biological concept of METAMORPHOSIS) and *permutation*, (Allegra 2010: 13) because in nature not everything is “commensurable” with everything, but there is always a link, however hidden, between the formal extremes of transformation. Therefore, even in biological sphere, the essential condition of METAMORPHOSIS is the permanence of identic traits in successive transformative stages: the FORM does not totally change, but there is always equilibrium between what changes and what remains unchanged (Didi-Huberman 2000; Tedesco 2010, 2014, 2015, 2016) (see FORMATION, ONTOGENY/PHYLOGENY, MORPHOLOGY).

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