

Towards an extended epigenetics perspective

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Nowadays epigenetics studies are based on the research of regulation of developmental and genetic networks, chromatin systems markers, DNA-binding proteins, transcription factors, chromosomal proteins as histones and Polycomb complexes. This refers to the complexities of the genome that standard genomics was not able to incorporate; however, this implies that epigenetic approach is subject only to molecular research, since much of the work in this area continues taking for granted the dimensions of development and environment.

This paper aims to show, first, the reduction and limitation of epigenetic framework. These limitations stem from historical trace: when C. H. Waddington coined the concept epigenetics in 1942, taking into account the contributions of experimental embryology and genetics of his time to find out how the phenotype of organisms came. In second place, I am looking for an alternative proposal to achieve an extended perspective that allows the interpretation of epigenetic processes in the context of developmental systems theory. In our terms expand the perspective means conceiving biological and environmental agents in a context of networks, interactions, relationships and reactions to a specific organizational level. This proposal, based on Waddingtonian thesis, supports the causal role of the genome and other cellular and environmental agents, allowing a more inclusive and integral analysis of organisms.