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*Exaptation: the evolutionary logic of the living between functions and structures*

Recent discoveries in several evolutionary fields (from *evo-devo* to molecular evolution) have underlined the crucial role of the Darwinian process of “functional cooptation” (or *exaptation*) in order to explain the natural histories of major adaptive traits, morphological structures and behaviours. These kinds of mechanisms stress the interplay between functions and structures in evolution, and define the agency of natural selection as a trade-off between selective environmental pressures and architectural or developmental constraints. The ongoing theoretical shift towards a more structural biological explanation is one of the main directions in the construction of an extended Neo-Darwinian Synthesis.