Technological Evolution from the Perspective of Enactivism and Embodiment

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Abstract

Technological evolution is setting a challenge to the paradigms of embodiment and enactivism. The core theorem of embodiment, transparent perception, i.e. the understanding of objects as senso-motorical patterns of the organism, cannot be applied to complex modern technological objects as for example a computer chip. And although less complex tools like spears might be considered as extensions of the body, still the question remains on how their actual usage, i.e. goal oriented action pattern is selected, since objects can be used or action patterns can be triggered to attain many different goals in various contexts. On the other hand, enactivism's basic theorem of self-organisation and self-reproduction oriented selection of objects/action patterns cannot model how a perturbational signal can be formed within an inner environment that again can cause an autogenic formation of new action patterns, which furthermore always come with the adaption obstacle of learning costs. Human cultural evolution is based on active change of the environment beyond established organism- environment relations resulting in the formation of new affordances which are not adapted yet. Therefore, co-emergence cannot be based solely on a relation between solipsistic organism and its material surrounding. The human surplus of contextual reorganisation and invention of new action patterns must be rooted in a mechanism which exceeds the basic statements of enactivism and embodiment. To address this problem a process-philosophical extension of the paradigms is presented. Thus, environmental relations, objects and tools are understood as storages of events. Past situations and associated states of the organism can be condensed in communicative symbols, meaning that events and processes become objectified in reference to states of others or past self, thus, making up a new environmental configuration. This semantic recursion of organic states or more general the recursive doubling of event-patterns is discussed as basic mechanism of technological evolution.