First Meeting of the NeuroMod Institute
Fréjus, 1-2 July 2019

Reinforcement learning and behaviourism

This talk is designed to provide some background information from the Humanities for those in the audience that are located in the natural sciences. A broad historical introduction to behaviourism is provided since this approach, which dominated psychology from the late 19th century up to the 1950's, has theorized what today is called reinforcement learning. Central notions such as stimulus-response and the black box ("we don't want to look inside the skull since we don't understand what is going on, so we measure what goes in and what comes out") are introduced. It is also explained why behaviourism declined in the post-war period and today is considered more or less as a historical dead-end, although there is neo-behaviourism and often people don't know that they do behaviourism when they do. Behaviourism triggered a strong reaction especially in linguistics where it was argued by Noam Chomsky since the 1950s that learning how to eat and walk (genetically programmed skills) is not based on the same cognitive mechanisms as learning how to play the piano or to fill in a tax declaration (human artefacts). By all means, the development of language in the infant falls in the to former category (which means that language is also genetically programmed).