



Sensorimotor Exploration/Exploitation with Coordinating Local Predictions

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Sensorimotor Exploration/Exploitation

with coordinating local predictions

Framework & Principles

This contribution aims to show how **exploration and exploitation** might be **tightly intertwined** when modeling sensorimotor behaviors with coordinated predictive local representations. In such a framework, **learning** equals to **creating and selecting anticipations** to adapt to the dynamics of the agent and its environment. Motor actions are undertaken based on the expected outcome of the anticipations, and anticipations reinforced when successfully matching the dynamics. Reaching goals is thus equivalent to **navigating through the sensorimotor space** by forming and following **chains of coordinated predictions**. Although the agent may constantly only try to exploit its knowledge, the presence of multiple dynamic goals, the lack of correct anticipations, interactional noise or external constraint will lead to further exploration and the generation of new task-independent representations.

