

Artificial Intelligence holism

Artificial intelligence doesn't begin with just the brain. Pull back and see an entire creature as a functioning entity. It senses, moves, needs, and interacts with the environment. Animals possess plastic yet durable behaviors that are also modular. Modularity is successful in the hierarchically organized world that we live in. It means re-usability. If a dog learns about eating cake on Tuesday under the porch, another piece of cake on Wednesday behind the house will truly be "a piece of cake"! Hierarchy outside means it must be represented inside. Survival is about using these representations to predict and manipulate the environment. Now look inside the brain and see cells signaling each other, turning each other on and off. Input from sensors and output to motors. Motive to drive the system toward goals that satisfy needs. Memories formed and retained that serve survival. Observe the hierarchical structure of the cortex. The lesson to be taken is that a connectionistic, hierarchical architecture seems to be required. The clay that the system is built out of, and the means by which it comes about, whether by evolution or artifice, will allow for variability of the details.

See also this related argument for [embodiment](#).