



# Beyond Perception

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Enactivism emphasizes the essential role sensori-motor expectations play in perception and cognition. I examine how an approach closely related to enactivism – a theory that takes interaction as central to most cognition – might explain cognition beyond perception. Interaction is a more dynamic construct than a system of sensori-motor contingencies. I begin by looking at a few computational models of enactivism and then discuss how they might be recast to explain what it means to project structure onto the world. Examples of projection are easy to find. Counting a group of pennies, comparing the size of dinner portions, and re-interpreting a scene are projective processes, as are reading and grasping the meaning of an illustration. Indeed, every time we perform a task (e.g. cooking an omelet) we project a task space of ‘plausible continuations’. We revise our expectations of what we may do and what is likely to occur. Projection also occurs when we re-orient a map to make it align with the region it represents. We interactively register the map by projecting an isomorphism and in so doing we re-interpret both map and surroundings. I develop this line of thought further – how cognition is interactive – by discussing why we perform some operations entirely in our head and why we perform some cognitive operations with things in the world. If we are tightly coupled to outside structures and processes then computational resources should be harnessed wherever they are less costly. To make this idea precise requires providing a metric for estimating how ‘costly’ it is to perform a cognitive process (or part of a cognitive process) in the head versus outside the head. After discussing this metric I conclude with a brief discussion of embeddedness and the dispute over the boundary of the mind.

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