



Psychological Reality: Why We See the World the Way We Do

Video Transcript

The bedrock of cognition

Our cognitive architecture aligns, at least in part, with the structure of the external world, because it developed through our evolutionary history. Every living organism must, in one way or another, combine what happens outside with what goes on inside to determine the best course of action for survival. So, in a broad, biological sense cognition involves integrating sensory input, that is external stimuli with internal physiological or motivational states to guide adaptive behavior. This will be our updated working definition of cognition.

In this chapter, our goal is to develop an evolutionary understanding of cognition. We trace its origins in the abilities we share with other animals, while identifying what makes human cognition distinct. We draw from evolutionary anthropology — the study of how behavior and cognition evolved — and adopt a comparative, cross-species perspective. This allows us to identify the core mechanisms that organize behavior across the animal kingdom. A helpful way to think about this is to compare evolutionary aspects to the annual rings of a tree. We can think of the tree as representing the family of cognition. Imagine slicing through the evolutionary trunk and examining its inner layers, side by side. Each ring represents a new layer of cognitive growth, emerging from the structures that came before it.

At the core, we find hardwired behaviors. Some basic organizational principles are shared even with the simplest living organisms, such as the single-celled *Euglena*, whose nervous system contains only a few hundred neurons. Around this foundation, evolution added new layers of flexibility. These include learning systems, which allow animals like dogs to adjust their behavior through reinforcement and experience. With growing behavioral complexity came the need for foresight. This involves the mental rehearsal of actions before acting – a hallmark of ape cognition. Finally, in humans, these capacities culminate in language. Language enables us to organize thought symbolically and share it with others through syntax.

By following these layers and learning from animals across the evolutionary tree, we can observe how cognition gradually evolved. It moves from simple reactions to reflective, symbolic thought. But before we begin our journey through these milestones of cognition, we need to establish the foundations. These are the underlying principles that drive all behavior and cognition. The important questions are: Why do animals act at all? What motivates their behavior?