



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

### Video Transcript

#### **The mental stage**

Some organisms can try out actions in their mind before they act in the real world. They can imagine what might happen, without having to physically test it. This ability is mental simulation. From an evolutionary perspective, it can be understood as an adaptive extension of perception and action. This ability does not stand on its own. It depends on several more basic cognitive capacities. Any animal capable of mental simulation must, at least in a very basic sense, have an internal representation of its surrounding environment.

Psychologist Edward Tolman showed that even rats form internal representations of their environment. They build cognitive maps that allow them to find food without having to try every possible path.

However, mental simulation goes beyond mapping space. Köhler's chimpanzee Sultan stacked boxes to find a solution how to reach a banana. For this he also needed at least a basic understanding of physical principles. Sultan had to imagine whether one object could be placed stably on top of another. For this to work, the internal model must be accurate enough to support such imagination. To imagine this kind of action, the mind needs a naive sense of how objects behave. It must represent basic physical relations like weight, balance, and support. We can think of this as a simple physics engine. Not a formal theory, but an intuitive model of the physical laws that supports mentally simulating our actions in the world. This intuitive understanding of physics is a powerful cognitive module.

To experience this directly, I'd like to invite you to a simple imagination experiment. It was first conducted by Herbert Kleint in the 1930s. Close your eyes and imagine the following. You are standing on a large, thin glass plate. The plate is supported only by the backs of two chairs. Can you imagine this? Take a moment to visualize it. Good. Now open your eyes again. How easy was it for you to picture this situation? Many people find this surprisingly difficult. As soon as they imagine it, the glass seems bound to break beneath them. Or at least it feels somewhat uncomfortable — like one might fall. Their intuitive understanding of physics gets in the way. It prevents them from fully imagining a situation that violates physical constraints. This small experiment shows how mental imagery is shaped — and limited — by our intuitive physics.



Sultan must have had a mental representation of his environment. And he must have combined it with an intuitive understanding of physics. Together, these provided the stage for his mental simulation. But on this stage, Sultan must have also been present himself. He must appear as the protagonist of the scene. He must be able to perceive himself — both as a physical body and as a psychological agent who acts. To imagine his own future actions, the mind must be able to represent both the actor and what the actor acts upon. And it must understand that these two belong to the same individual. The imagined self and the experiencing self must be recognized as one and the same.

This brings us to what we call synchronous identity. It is a problem that arises whenever we deal with imagination and mental representation. The core idea is simple. Identity can exist simultaneously across different representations of the same object. For example, a banana can be physically present in front of us. At the same time, it can be imagined in the mind. These are two different representations. Yet they must still be understood as referring to one and the same entity. Synchronous identity, then, is the mapping between what is perceived and what is imagined.

This is why it is important to distinguish between the reality we perceive and the reality we imagine. That distinction is crucial. An imagined banana, even if vividly pictured, must not truly satisfy hunger. Otherwise, imagination would collapse into illusion. Mental simulation therefore depends on synchronous identity. It requires a stable identity mapping between what is perceived and what is imagined.

But this raises many deeper questions. How do we represent different versions of ourselves? How does the figure on my mental stage feel distinct from my physical self? And does a chimpanzee like Sultan experience himself in the same way that I experience myself? Answering these questions requires us to consider how our sense of self develops. How it emerges across the lifespan. And whether it eventually takes on features that may no longer be shared with our primate relatives.