This is how your brain makes your mind

Your mind is in fact an ongoing construction of your brain, your body, and the surrounding world.

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Figure 1. Human brains can categorize this object by how it will be used. Computers using machine learning will only see a feather.

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This incredible ability is called ad hoc category construction. In a flash, your brain employs past experience to construct a category such as "symbols of honor," with that feather as a member. Category membership is based not on physical similarities but on functional ones—how you'd use the object in a specific situation. Such categories are called abstract. A computer cannot "recognize" a feather as a reward for bravery because that information isn't in the feather. It's an abstract category constructed in the perceiver's brain.

Computers can't do this. Not yet, anyway. They can assign objects to preexisting categories based on previous examples (a process called supervised machine learning), and they can cluster objects into new categories based on predefined features, usually physical ones (unsupervised machine learning). But machines don't construct abstract categories like "facial hair for pretend spies" on the fly. And they certainly don't do it many times per second to comprehend and act in a massively complex social world.

Just as your memory is a construction, so are your senses. Everything you see, hear, smell, taste, and feel is the result of some combination of stuff outside and inside your head. When you see a dandelion, for example, it has features like a long stem, yellow petals, and a soft, squishy texture. These features are reflected in the sense data streaming in. Other features are more abstract, like whether the dandelion is a flower to be placed in a bouquet or a weed to be ripped from the ground.

Brains also have to decide which sense data is relevant and which is not, separating signal from noise. Economists and other scientists call this decision the problem of "value."

Value itself is another abstract, constructed feature. It's not intrinsic to the sense data emanating from the world, so it's not detectable in the world. Value is a property of that information in relation to the state of the organism that's doing the sensing—you. The importance of value is best seen in an ecological context. Suppose you are an animal roaming the forest and you see a blurry shape in the distance. Does it have value for you as food, or can you ignore it? Is it worth spending energy to pursue it? The answer depends partly on the state of your body: if you're not hungry, the blurry shape has less value. It also depends on whether your brain predicts that the shape wants to eat you.

Many humans don't hunt for food on a regular basis, apart from browsing in markets. But the same process of estimating value applies to everything you do in life. Is the person approaching you friend or foe? Is that new movie worth seeing? Should you work an extra hour or go bar-hopping with your friends, or maybe just get some sleep? Each alternative is a plan for action, and each plan is itself an estimation of value.

The same brain circuitry involved in estimating value also gives us our most basic sense of feeling, which you know as your mood and which scientists call affect. Affective feelings are simple: feeling pleasant, feeling unpleasant, feeling worked up, feeling calm. Affective feelings are not emotions. (Emotions are more complex category constructions.)

Affect is just a quick summary of your brain's beliefs about the metabolic state of your body, like a barometer reading of sorts. People trust their affect to indicate whether something is relevant to them or not—that is, whether the thing has value or not. For example, if you feel that this article is absolutely brilliant, or that the author is off her rocker, or even if you've spent the energy to read this far, then it has value for you.

Brains evolved to control bodies. Over evolutionary time, many animals evolved larger bodies with complex internal systems that needed coordination and control. A brain is sort of like a command center to integrate and coordinate those systems. It shuttles necessary resources like water, salt, glucose, and oxygen where and when they are needed. This regulation is called allostasis; it involves anticipating the body's needs and attempting to meet them before they arise. If your brain does its job well, then through allostasis, the systems of your body get what they need most of the time.