Our evolved brains are remarkably complex structures capable of amazing feats, such as cognition, memory, emotion, computation, prediction, language, creativity, music, exploration, and imagination, just to name a few. It begs the question, however, if the actual purpose of our brains is to accomplish these amazing feats.

Dr. Lisa Feldman-Barrett, a University Distinguished Professor of Psychology at Northeastern University, published a book about the brain and emotions called How Emotions Are Made in 2017. Dr. Feldman-Barrett, who also has appointments at Harvard Medical School and Massachusetts General Hospital in psychiatry and radiology, published a provocative article, along with her colleagues, in 2016, on the brain and its ultimate role. The article ostensibly covers the complex interplay between the effects of chronic stress on one’s body and energy (allostasis) and depression, as reflected in its somewhat cryptic title, “An Active Inference Theory of Allostasis and Interoception in Depression.”

But at the heart of the article is a remarkable assertion—that the main purpose of our brains is to regulate our body’s energy balance. The authors argue that our brains predict how much energy we need and then processes the outcomes of our actions on bodily sensations (interoception), and then makes the appropriate adjustments. These processes allow us to adapt to our environments and balance the intake of energy (food) with the expenditure of energy (movement). To be able to anticipate and allocate energy most efficiently, we must have an internal model of the world and then use Bayesian processes to assess whether our actions will be worth the energy output. Essentially, the article postulates that the brain has “allostasis and interoception at the core of its internal model.”

To support this model, the authors reference structural and neuroimaging data, animal translational data, cognitive science, computational theories, and metabolism. What may surprise you is the theory that we construct our emotions from our predictions, prediction errors, and sense of uncertainty. For example, rather than considering that our amygdala encodes fear, it encodes uncertainty to the cortex about the difference between “predicted sensory input...and helps to adjust physiological functions in support of allostasis.”

At the very least, the article can change the way we think about why we have brains.

REFERENCES