

A New Way of Understanding and Discussing Beliefs

By Jim Myers

Dolphins are born swimming; giraffes learn to stand within hours; a baby zebra can run within forty-five minutes of birth. Humans are helpless at birth. We spend about a year unable to walk, about two more before we can articulate full thoughts, and many more years unable to fend for ourselves.¹ However, just like plants seek sunlight, humans seek information from the moment they are born.² Human DNA created the information seeking organ -- *the brain*.

The human brain has a total of 86 billion neurons, of which 30 billion make up the main information processing area called the cortex. The brain is sealed within the dark, silent chamber of the skull. It has never directly experienced the external world, and it never will.³ Information about the outside world is collected by sensory receptors that include the skin, eyes, ears, nose, tongue, temperature, pain, balance, motion, and head direction.⁴ Sensory information is transmitted by through the neurons of the central nervous system to the brain.⁵ **Neurotransmitters carry electrochemical information** across the gaps between neurons called a synapse to the brain.

- The eyes convert or transduce **photons** into electrochemical signals.
- Mechanisms of the inner ear convert **vibrations in the density of the air** into electrochemical signals.
- Receptors on the skin and inside the body convert **pressure, stretch, temperature, and noxious chemicals** into electrochemical signals.
- The nose converts drifting **odor molecules** into electrochemical signals.
- The tongue converts **taste molecules** into electrochemical signals.⁶

The moment we awaken in the morning, we are surrounded with a rush of light and sounds and smells. Our senses are flooded. All we have to do is show up every day, and without thought or effort, we are immersed in the irrefutable reality of the world.⁷ It feels as though we have direct access to the world through our senses, but we don't. All of the things we are experiencing are taking place in the mission control center of the brain.

- Seeing isn't happening in our eyes.
- Hearing isn't taking place in our ears.
- Smell isn't happening in our nose.

All of our sensory experiences are taking place in storms of activity within the computational material of your brain.⁸ Everything we experience — every sight, sound, smell — rather than being a direct experience, is **an electrochemical rendition in a dark theater**.⁹ The brain searches for patterns in electrochemical signals it receives. Dr. Gyorgy Buzsaki, in his book *The Brain From Inside Out*, explains the new hypothesis.

The brain comes with a nonsensical dictionary and evolutionarily preserved, preconfigured internal syntactical rules that can generate a huge repertoire of neuronal patterns. Initially these patterns are regarded as nonsense neuronal words, but *they acquire meanings through human experiences.* Learning is a matching process, in which preexisting neuronal patterns are matched with patterns generated by those experiences. Nonsense neuronal words become neuronal words with meanings.¹⁰

Let me repeat what happens in this process.

1. These “neuronal words” become “internal models.”
2. The brain uses those “internal models” to identify patterns in incoming information.
3. The brain attaches meanings from the internal models to the patterns it identified.
4. The new pattern becomes part of the reality generated by the brain.

Realities are what we experience as life, and how we understand those experiences. Our thoughts, and our dreams, our memories and experiences all arise from this process.

When we walk down a city street, we seem to automatically know what things are without having to work out the details. Our brain makes assumptions about what we are seeing based on **internal model** that have been built up from years of experience of walking other city streets. **Every experience we have had contributes to the internal model in the brain.** Instead of using our senses to constantly rebuild our reality from scratch every moment, the brain is comparing sensory information with internal models that it has already constructed -- *updating, refining, and correcting them.*¹¹

Ultimately, anything we can communicate to others has our internal model. If we have a word for it – *the brain has an internal model for it.* This includes all of our religious, political, and economic beliefs.

*The first step in discussing conflicts about beliefs
is understanding the brain's roles in creating them.*

¹ *The Brain: The Story of You* by David Eagleman © 2015, Vintage Books, New York, NY; p. 5.

² *Livewired: The Inside Story of the Ever-Changing Brain* by David Eagleman © 2020, Pantheon Books, New York, NY; p. 173.

³ *The Brain*; p. 41.

⁴ *The Brain From Inside Out* by Gyorgy Buzsaki © 2019 Oxford University Press, New York, NY; p. 106.

⁵ <https://mcb.berkeley.edu/courses/mcb135e/nervous.html>

⁶ *The Brain*; p. 43.

⁷ *The Brain*; p. 39.

⁸ *The Brain*; p. 39.

⁹ *The Brain*; p. 41.

¹⁰ *Inside Out*; pp. 25-26.