

The Neurobiology of Enlightenment

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So before I start I wanted to warn everybody that this is a little longer than my usual homily. In order to talk about the neurobiology of enlightenment, I have to explain some technical stuff in addition to the homily part.

So hang in there, it may or may not be worth it.

Good afternoon and welcome to a New Year of our journey together as a cooperative congregation.

On the one hand the New Year is an artificial construct. After all, the earth does not cross a cartoon finish line in space each year on its path around the sun. But although this time is artificial it is not arbitrary, because we celebrate the return from cold to warm, from death to life, at least in the Northern Hemisphere, and particularly in climates less fortunate than our own.

And so the New Year has meaning: the meaning we assign to it.

Rebirth at the New Year is an idea that cuts across many cultures. We Unitarian Universalists seem very comfortable with rebirth; you may have seen the UU T-shirt that reads:

Born Again, and Again, and Again...

As we consider our New Year's Resolutions, the way that we each want to be reborn in this New Year, I hope that we will think about inhabiting our brains in a slightly different way. That's what I would like to talk with you about today.

Many years ago I learned about the impact of evolution on the human brain from a Carl Sagan program. Sagan was a Cornell professor who made significant advances in astronomy, and was also a great popularizer of scientific ideas.

Back in the eighties, *Time Magazine* called him the showman of science.

In one of his television programs, Sagan spoke to the camera from the back seat of a Chicago taxi and said something like this:

Above us is the El, the Chicago elevated train. Here on the street are buses, cars, taxis, people on bicycles, pedestrians. Directly below is the great Chicago train system: Commuter trains, long distance trains.

The systems came into being at different times, with different specifications and different schedules.

If you try to get from Point A to Point B using three different systems, you will find it extremely difficult to transfer.

This is your brain.

With this metaphor, Sagan referred to the concept of the triune brain, which he explained further in his book, *The Dragons of Eden*. To understand this idea, we must first keep in mind that evolution is nothing like intelligent design.

The great engines of evolution are mutation and selection. Mutations arise all the time, and when the environment changes, mutations that fit the new conditions lead to reproductive success.

No thinking is required. In fact, evolution is very stupid. This is how, for example, the common garden snail ended up with its anus positioned directly above its mouth.

If a deity designed that, it was a trickster god, and not the god in the Bible.

By the same token, the human brain is not a fine machine like a Porsche, but more like a Rube Goldberg contraption, or the game Mousetrap. In general, the parts of the brain that are lower in the skull evolved earlier.

At the base of the brain is the brainstem, the oldest part, which controls essential functions like breathing and circulation. This system exists in all vertebrates, and is part of the R complex, where R is for Reptile.

The reptilian brain evolved 500 million years ago, and still functions in us pretty much as it did in dinosaurs.

Aggressive behavior, territoriality, ritual, and social hierarchies are all in the domain of the R complex.

Encircling the R complex is the limbic system, which evolved about 150 million years ago in small mammals. The limbic system is the domain of many strong emotions, such as rage, fear, and sentimentality. Some of the emotions that arise in the limbic system we tend to think of as uniquely human, such as awe, and altruism.

We store many of our memories in the limbic system.

Directly above that is the neocortex, the new brain.

This part expanded spectacularly in primates only two or three million years ago, and gives us the capacity for lifelong learning, abstract thought, and complex culture.

So when people who meditate complain about the monkey mind, they aren't kidding.

All that pesky neocortex chatter gets in the way of focusing on the "breathe in, breathe out" in the deepest, oldest part of the brain.

Each part of your brain evolved at different times, with different tendencies, to fit different ecological niches.

Ever have trouble making up your mind? It's amazing we can do it at all.

Imagine that right now a woman sitting next to you starts to unwrap a cough drop. You try to focus, but the plastic crackles loudly.

Your neocortex is thinking, she'll be finished soon.

Your limbic system is thinking, Poor dear, she has a cold.

And your R complex just wants to slap her.

Meanwhile, your trusty brain stem is thinking, breathe in, breathe out.

You embody all these contradictions every minute.

Even without a concept of neuroanatomy, we humans reflect on what it's like to live with a multipart brain. We talk about thinking with our head, heart, and gut.

A hundred years ago Freud wrote of the conscious, preconscious, and unconscious minds.

Carl Sagan noted the rough parallels with the parts of the brain.

Like Sagan, Joseph Campbell was a serious thinker who was also a great popularizer. Campbell's field was comparative mythology.

In his book, *The Hero of 1000 Faces*, Campbell described the arc of the hero's journey, which recurs in many cultures.

The hero begins in the ordinary world, where something calls her to adventure.

She may not want to go but a mentor calls her or circumstances force her to cross a threshold into a special world of tests, enemies and allies.

She endures an ordeal and takes ownership of her reward, which she must carry back on a perilous return journey, experiencing a transformative rebirth.

She returns to share her reward with the ordinary world. Sound familiar? It should, if you've seen *Star Wars*.

George Lucas is a big Joseph Campbell fan, and Luke Skywalker's travails are based on Campbell's concept of the mythic journey.

Campbell was drawn to the theories of the influential psychologist Carl Jung.

Jung's theory of the mind divided it into the ego, or conscious mind; the personal unconscious, which includes the suppressed memories of the individual; and the collective unconscious, a realm that includes a number of archetypes that Jung believed were common to all humans.

So this is another model that divides the mind into three, but in this case, the collective unconscious is further divided into archetypes, which include the female aspect of the male and the male aspect of the female.

Campbell said that the hero's journey with its many stages was ultimately about visiting every part of the self and integrating the Jungian archetypes, which Campbell viewed as biologically based.

He wrote voluminously, and I've only read a little of what he wrote.

But as far as I know, Campbell did not make an explicit connection between the Jungian parts of the mind and the evolutionary parts of the brain.

Nor did he connect the hero's journey with Sagan's metaphor of the Chicago Transit Authority.

For me the connection between these ideas seems necessary and obvious, perhaps because in the mythology of my particular family, Chicago is sacred ground.

I've only ever been to Chicago once, in 1994, on a business trip.

While I was there I visited my great-Aunt Florence in a nursing home in Lake Forest, a wealthy enclave south of Chicago where my mother's family once lived.

On that visit to Aunt Flo, I took the same commuter train my Uncle Walt rode to his office every day for fifty years.

I still have a pin in the shape of a coal engine that the grateful railroad gave Walt when he retired.

When I arrived in Lake Forest, I stood in the clean and lovely town square, and watched the blond soccer moms pick up their kids in their fully loaded SUVs. I could not believe that such ordinary things happened in a town that had always been a set of stories, of myths, until that moment in my life.

I wanted to grab somebody's lapels and say, Do you realize this is Lake Forest?

Even the nursing home, set among stately mansions, was elegant.

If you don't think money can buy happiness, you've never been to Lake Forest.

I was forty then and arrived unannounced to visit my aunt, whom I had not seen since my early childhood.

She who had been the family matriarch, enormous and imposing, had become a tiny little figure in a wheelchair.

Still smart as a tack, as that generation used to say.

We were simply amazed to be in each other's company.

That was a mysterious journey but it was not a hero's journey.

To take that, I would have to start at my mother's home town of Lake Forest and travel north to a very different part of Chicagoland, to Zion, on the shores of Lake Michigan, where my father's family lived in a faith healing cult for three generations.

That trip would require multiple transfers. I would travel by train, taxi and time machine, through space and back in time, and from affluence to the direst poverty.

After many adventures with tricksters, mentors, and threshold guardians, all the parts of my own brain, I would arrive in a little boy's bedroom early one morning in the winter of 1905.

My grandfather was seven.

Born with club feet and a survivor of polio, he would be lying under a thin blanket in an unheated room.

His parents had given everything they owned to the religious leaders of the town so their son could be healed.

And why not?

The tabernacle was lined with the crutches of the miraculously cured, actually purchased from pawn shops all over Chicago.

Like the other disabled children in town, my grandfather was being taught that he could not be healed because he was a sinner who had not accepted Jesus as his personal savior.

That morning with his legs under the bedclothes and the wind off Lake Michigan blowing through cracks in the cheap walls, he pretended for a few minutes that his body was whole.

The end of my journey would be to sit with that young boy and say:

The sky is full of nothing but stars and they are indifferent to our suffering.

Your disability is inconvenient but you are fine, just as you are.

That journey would have meaning for me because it would bring together many parts of who I am, and rattle the walls of many family secrets.

We all have journeys like that to make, different in detail, yet sharing the same mythic underpinning.

And I suspect there are habits of mind that can take us on smaller healing journeys each time the committee of our brain parts convenes to make a decision.

Elizabeth Kubler Ross wrote about the final mythic journey each of us makes toward death. You've likely heard about her five stages of grief: Denial, Anger, Bargaining, Depression, and Acceptance.

When she herself was terminally ill, Kubler-Ross announced that her life's work was garbage, and really, dying was not at all what she expected.

This makes perfect sense to me, because throughout my three decades of parenting, I've encountered many childless people who know exactly how I should raise my four.

In any case, back when Kubler-Ross still agreed with herself, she used to say that it does not take a major crisis to set off the five stages. Even losing your keys will do it.

Along the same lines, I suspect that it does not take a major life transformation to bring us in touch with all the parts of our brain.

I spend a lot of time in business meetings where the model agenda focuses on a problem to solve, and committing to action steps.

It's all about making decisions.

I recently joined the Live Oak Finance Committee, and was startled that the meetings begin with each person on the committee checking in about events and feelings that seem to have no connection with the matters at hand.

But then I thought: What if we took the time in corporate meetings to find out how the representative from each department is feeling before making decisions? Maybe it would be worth the time.

And to take that a step further:

What if each of us stopped to acknowledge our own mixed feelings (quite possibly the products of different parts of our physical brains) before we make up our minds?

We could honor the interconnected web of life right here inside each of our skulls.

Maybe everybody else in this room already does that, but I certainly don't. I'm not in the habit of thinking of each decision as a journey around my own brain.

So here we are in the New Year, and I believe I've just made a resolution.

At least once a week when I make a decision, I'm going to slow down, check in with all the parts of my brain, all the mixed messages I'm experiencing, and turn the decision into a journey.

Perhaps I'll see you on the road.

Amen, and blessed be.