

## Prologue

*I have a confession. I read Scientific American, religiously. In every issue there is a box add for the Freedom From Religion Foundation with catchy phrases like "Evolve Beyond Belief" or a quote from Clarence Darrow, "I don't believe in God because I don't believe in Mother Goose".*

**Reflections on Science and Religion**

I am a physician, a scientist, schooled in the rational search for how things work. Growing up I was enthralled with new discoveries and theories concerning the origin of the universe and the evolution of humankind. All my life I have been immersed in a culture of thinking, making logical inferences, proving things through experiment and deduction. But I was also brought up in the Christian faith, Presbyterian to be precise. And at times it has been a struggle to reconcile my everyday scientific view of life with my church-going religious frame of mind. In high school we had a young assistant pastor, just out of seminary. He was given charge of the youth program and he and I had a number of opportunities to discuss theology. I was struck by the illogic of his description of predestination. It seemed dark and unfair. I might have given up the religious viewpoint altogether but during those formative adolescent years, my mother, an artist, a Sunday school teacher and a general seeker after truth, helped me to look for deeper meaning in both church and in science class.

Nevertheless, in college and during my further studies and training in medicine I became agnostic, basically putting religion aside. When Sharon and I returned to Staunton with children we decided we needed the church and joined Emmanuel. I started thinking of God again and began to feel at home with this congregation of believers. But I still had trouble reconciling my scientific knowledge with my religious beliefs. The platitudes such as "God works in mysterious ways" and "God created us through evolution" just did not satisfy me. So for years the two perspectives on life, the religious and the rational, pretty much kept to themselves, compartmentalized in my brain.

But lately I have become interested in a scientific concept that is both rational and, to me, mystical. The concept is called "emergence", loosely defined as the study of how complex things can arise without external direction from the interactions of simple units. This is a way of looking at things that can be applied to diverse situations. For instance, it can be used to study how ants with very little individual brains, can, as a colony, do amazing things. It can also be used in city planning in figuring out how cities divide up into neighborhoods based on shared interests and backgrounds.

Studying ants and planning cities can be fascinating and useful but what really has intrigued me is how this way of approaching complex things can be used to understand how our bodies develop from a single cell. In the beginning there is only this fertilized egg. It divides into two and the two into four. Successive generations of these dividing cells specialize to carry out different functions and construct the various parts of a body. After nine months a baby human emerges as a community of a trillion cells. The important thing is that these cells have had no external director, only internal instructions of DNA. How does each cell know where it is in the body and what role it is to play in this large community of cells. The miracle of our development from egg to human is in the way our cells talk to each other, interacting through chemical signals to produce our varied tissues, fingers, noses and hearts. No cell knows what a heart looks like but collectively the cells of our body somehow produce us. That is emergence and the more you study it the more awesome, mysterious and miraculous it becomes.

In similar fashion, our brains are communities of perhaps 60-80 billion individual cells that have somehow arranged themselves and interconnected in incredibly complex networks, again without external blueprint. Nerve cells just do their jobs as dictated by their interaction with other cells. And in their interaction, by way of electrical impulses and chemical signals, our thoughts and actions emerge. The individual cells are

not smart, have no thoughts of their own but their complex electrical symphony gives rise to the conscious you and me. To me, this is powerful stuff! Each of us perceives himself or herself to be a person. We are somehow connected to our bodies and our brains but our subjective sense of identity, our thoughts, dreams, curiosity, plans and skills emerge not from the physical cells of our bodies and brains but from their activity and communication. In a sense we are not made of atoms, we, our conscious selves, are spirits, for want of a better word, created by the dynamic interplay of billions of cells in our brains and bodies. And that is where my scientific approach begins to merge with my religious world. I find that I can accept this ethereal, insubstantial spirit as being just as real as the many other emergent phenomena that science deals with. Real but mystical nevertheless.

And there is one more extension of this concept of emergence. As we come together in groups, our spirits interact with each other. What emerges is a community of spirits, not just bodies. I learn from you and you learn from me, as we care for each other, our spirits intertwine; I live in you and you in me. The community that emerges from our give and take with our fellow humans can be seen as a real though intangible being with a life of its own. A higher order being.

Here is where I see a bridge between my scientific mind and my religious heart. My Christian faith has evolved over the years, understanding that Love is the essential focus. My faith is less concerned about things like predestination. The Love I strive for is a radical caring about and caring for each and every other human being. If Love is the essence of our interaction with each other and with our neighbors, we, as followers of Jesus, become the body of Christ. We, as a community of Love, become a higher order being, no less real than the spirit that emerges within each of us as our billions of brain cells interact.

If God is Love, then Love is God. The Body of Christ emerges as we follow the path that Jesus showed us. E. Pluribus Unum. Out of many, One. Only in that way may we glimpse the Kingdom of Heaven.

So here I am a scientist talking about spirit and creation. Advertisements for the Freedom From Religion Foundation do not make me angry, they make me sad. I do not doubt that the foundation has members who are very intelligent but, I think, not wise. They miss the point of religion, probably because of all the false religions out there advocating fear, selfish interest and even violence. But by rejecting all religion they miss what makes us truly human.

Now, having exhausted myself in all of this rationalization to help my scientific mind find common ground with my heart, I am reminded again of my mother's advice. After a tour of Turkey many years ago she became enthralled with Sufism and particularly Rumi's Path of Love. I feel the need to let go of my internal arguments about the nature of the cosmos and the human condition. So I will end with her advice in two quotes from Rumi:

"Put your thoughts to sleep, do not let them cast a shadow over the moon of your heart, let go of thinking."

"Submit to love without thinking."