

Mr. Rogers, Fred Rogers, was a wonderful teacher and an ordained minister who pushed himself to move beyond the dictates of his religion into not only the spiritual, but also the **cosmic** perspective. The recent documentary, “Won’t You Be My Neighbor” shares his wisdom, his insights, and how he expanded as person over the years.

I’ve always felt that Mr. Rogers rejoiced in science in ways that I find much like my own. He once had as a guest on his show, “Mr. Roger’s Neighborhood”, a very young Bill Nye the Science Guy. Nye blew up a balloon using baking soda and vinegar. Mr. Rogers, watching Bill Nye set up the experiment, articulated the feelings of the children who were watching and said: “You have to take your time with science”. Later when the vinegar and baking soda were mixed together in a bottle with the end of the balloon spread over the top, and the balloon became full of carbon dioxide, Rogers gave voice to innocent wonder when he exclaimed: “To think that you could put those two things together and it could go ‘whoosh!’” My feelings exactly!

Many of you know that, according to my mother, I was “going to be a doctor just like [my] cousin Joel.” Obviously, that didn’t happen, but science still fascinates me. While I was still trying to fulfill my mother’s dream in

science labs in high school and college, the approximately equal sign and the mere colors, consistencies and shapes of what appeared in a flask drew me in. The reality that a reaction, any reaction, was occurring stopped me in my tracks and I had to force myself to engage in the data gathering that would tell me what had happened, why it happened and how it happened. Of course, the data was amazing, too, except when I couldn't gather any data because my experiment failed. Two such occasions stand out for me. The first was when my biology teacher gave each pair of lab partners a live frog, a small plank with a hole at one end, and some rubber bands. The idea was to **gently**, place rubber bands around the frog so that it would lie comfortably, yet securely on the plank. Then we were to **gently** hold one of its hind legs and spread the webbing of that leg's foot over the hole so we could watch its blood flow under a microscope. Cool, huh? I remember being quite surprised when I couldn't see any blood flowing. It didn't take much longer to realize that my frog had not survived how I placed the rubber bands. The other experiment was one that I was to do at home. It was a fruit fly experiment, in which I followed a recipe to make fruit fly food, place the concoction in the bottom of a large jar and then put the fruit flies in to live their lives of rapid reproduction so that I could track their

genetic inheritance. Disaster ensued. I didn't get the fruit fly food into the jar in a very neat manner and, despite trying to follow the recipe, the stuff **!** made was obviously a little too rich and sticky for my poor little subjects /victims. It wasn't too long before there was not a live fruit fly in the bunch.

Despite it all, I still really do love science. I love reading about what others have researched and discovered. Two of my favorite books I read this past year, were science books, an old one, and a recent one. I finally read "Cosmos", by Carl Sagan. Then I read, "Astrophysics for People in a Hurry" by Neil DeGrasse Tyson. I was enthralled by their descriptions of our Universe. It was like listening to two different master poets describe the same scene employing disparate metaphors to capture what they saw.

In the last chapters of the books, each of the authors takes an opportunity to look philosophically and emotionally at what they explained and detailed. Those chapters were their chance to tell us that we should not merely ***understand*** the cosmic perspective, but why we should ***have*** the cosmic perspective. Neil deGrasse Tyson cautions that the "cosmic perspective" is crucial because it tells us how misconceived some of our earthbound, societal notions are. He encourages us to view our

interpersonal and international relationships in a universal context, tied to the very chemical and biophysical nature of the Universe. He writes:

...the cosmic perspective offers a bigger answer than you might expect. The chemical elements of the universe are forged in the fires of high-mass stars that end their lives in titanic explosions, enriching their host galaxies with the chemical arsenal of life as we know it. The result? The four most common, chemically active elements in the universe—hydrogen, oxygen, carbon, and nitrogen—are the four most common elements of life on Earth, with carbon serving as the foundation of biochemistry. We do not simply live in this universe. The universe lives within us. (*pp. 202-203*)

Carl Sagan articulates almost the same thing when he says:

- ...up there in the immensity of the Cosmos, an inescapable perspective awaits us.
- National boundaries are not evident when we view the Earth from space. Fanatical ethnic or religious or national chauvinisms are a little difficult to maintain when we see our planet as a fragile blue crescent fading to become an inconspicuous point of light against the bastion and citadel of the stars.

- We are made of stellar ash. Our origin and evolution have been tied to distant cosmic events. The exploration of the Cosmos is a voyage of self-discovery.
- We look back through countless millions of years and see the great will to live struggling out of the intertidal slime, struggling from shape to shape and from power to power, crawling and then walking confidently upon the land, struggling generation after generation to master the air, creeping down into the darkness of the deep; we see it turn upon itself in rage and hunger and reshape itself anew, we watch it draw nearer and more akin to us, expanding, elaborating itself, pursuing its relentless inconceivable purpose, until at last, it reaches us and its being beats through our brains and arteries ... It is possible to believe that all the past is but the beginning of a beginning and that all that is and has been is but the twilight of the dawn. It is possible to believe that all that the human mind has ever accomplished is but the dream before the awakening ...

Sagan takes the viewpoint even further, using the vantage point of the Cosmos to contrast with our picayune and sophomoric perspectives about accomplishment and success and even basic notions of right and wrong:

If we are to survive, our loyalties must be broadened further, to include the whole human community, the entire planet Earth. Many of those who run the nations will find this idea unpleasant. They will fear the loss of power. We will hear much about treason and disloyalty. Rich nation-states will have to share their wealth with poor ones. But the choice, as H. G. Wells once said in a different context, is clearly the universe or nothing.

To bolster his opinion, Sagan gives a nod to the research of James W. Prescott whose...

...cross-cultural statistical analysis of 400 preindustrial societies...found that cultures that lavish physical affection on infants tend to be disinclined to violence.

This should not be news to us and part of the problem is that it *is* news to us. deGrasse Tyson, when speaking of the cosmic perspective's ability to enlighten and broaden the ways in which we should be thinking about ourselves and others, writes:

The cosmic perspective is humble. The cosmic perspective is *spiritual*—even *redemptive*—but not religious.

I love that! Using the words “spiritual” and “redemptive” and then to say those terms are **not** used in a “religious” sense. Religious notions can be stifling. Religions tend to justify themselves by using their own internal suppositions, their gaze turning inward rather than outward. Ah, but spirituality, like the universe, is at once unassuming and expansive. Spirituality can also be redemptive in the sense that it unshackles us from our self-imposed limitations on seeing, hearing and feeling.

So, does this belief make me as much “Scientish” as Jewish? My spirituality is wonder-based, and “wonder” is the great drive that all scientists feel. Scientists are some of the most spiritual people I know. Their work (if you can call it work because there is so much passion in what they do) is prayer! The scientific endeavor, the cosmic perspective, does not pray **to** anything. Rather it prays **with** everything, everything we know and everything we are yet to discover. It is a progression of the self, moving out of the individuation of our bodies and our worldly concerns, stretching out our spiritual arms and embracing the cosmos as the rest of who we really are.

As you are able, please stand now. Stretch out your arms and feel your spirit and world expanding. Feel yourself moving through the Universe

in a straight trajectory and in concentric circles at the same time. Feel yourself in the stellar ash. Feel yourself in the depths of the earth's ocean. Feel yourself in the "heartbeat" of a butterfly. Feel yourself in a solar storm. Feel yourself inextricably intertwined in all of space and time, in all the grand singularities and the small inconsistencies that make the ALL so alive, so vital, so precious, so fragile and so wonderful.

Sing "Niggun haNefesh"