

The Journey of the Universe: Metaphors of Music and Life

How is it possible for humans ever to understand the universe – unfathomably deep, submerged in past and future, shrouded in dark matter and mystery? Philosopher David Hume laid out the challenge clearly in An Enquiry Concerning Human Understanding (1748). Human ideas have only two sources, he averred – they come from direct experience, as when we see with our own eyes. Or they come from the association of ideas gained from direct experience. Ideas can be associated in three ways – by their resemblance to one another, by their contiguity in time and place, and by their relation of cause and effect. By these means alone it happens that “while the body is confined to one planet, along which it creeps with pain and difficulty; the thought can in an instant transport us into the most distant regions of the universe.”

The Nature of Analogy and Metaphor

It’s astonishing, what the human mind can do with just the first type of association, the resemblance. The resemblance of one thing to another (the *analogia*, in Greek) is the basis of reasoning by analogy, which goes essentially as follows: *This unfamiliar entity, this mystery in my hands, seems in some ways to resemble this other entity, which I understand very well. I know what is true of the familiar entity. Doesn’t it stand to reason that the same would be true of the unfamiliar thing?*

The analogy takes many forms, from complex to simple.

The most complex form of the analogy is the *allegory*, a story of other lives that casts light on the story of our own. Narrating the story of the universe as a *journey*, for example, links it to the myriad allegories about human odysseys, when humans embarked on the wine-dark seas for destinies and destinations that would not be revealed for many years. Contracted, an analogy becomes a *simile*, in which two ideas are explicitly connected with the language of similarity: *like, as if, as though*. “Our solar system is like a womb that eventually brings forth life” (35) is an example. Even more contracted, the analogy becomes a *metaphor*, in which the similarity between two things is evoked by using language appropriate to one, in reference to the other. “The womb of intense creativity gives birth to the elements that eventually form our planet and our bodies.” (14).

Analogies can be used to learn, to teach, to create an image or an emotional response, to explain a phenomenon, to argue for a policy, to support a scientific theory or a legal decision or a moral decision. It would seem that the power of analogical reasoning is limitless, creating new ideas in a growing, infinitely branching tree of human thought. Thus, by means of analogy, we visualize what is too large or too small to be seen, convince ourselves of truths we cannot directly verify, move ourselves to understand and sometimes to love what we have never before imagined, see into the past, predict the future, and choose right actions in situations that bewilder us.

Analogy and Metaphor in The Journey of the Universe

Mary Evelyn Tucker and Brian Swimme have taken on an extraordinary challenge in The Journey of the Universe. The book aspires to help readers hold the universe in their minds and hearts, and to direct their understanding to the work of hope and care. Should we be surprised, then, that they make powerful use of analogies in all their richness of description and meaning?

Metaphors of description. As the journey of the universe unfolds, so do the descriptive metaphors. We see the origin of the universe in the language of fire -- *igniting, boiling over*, all the *cauldrons* and *furnaces* white-hot and explosive. We are invited to envision the evolution of the universe through images of *jelly* and *currant bread* and *soup* and *crusts*; because we create food ourselves, we can imagine a creative process that might otherwise be unimaginable. There are words of *weaving*, both *nets* and *fabric*. Familiar weather patterns -- *fog, clouds, winds, hurricanes* -- help us see the universe and feel its chill and power. We feel deep connection to the ocean, its waves and whirlpools; so marine metaphors bring us to feel a part of the *oceanic* universe -- the *waves* that ignite the stars in the Milky Way, and the white *whirling* gases. This is the universe that we navigate on Earth's journey through the stars.

There are metaphors of flowering -- *flourishing* (with its deep etymological roots in *blooming*) and giving *seed*. There are metaphors of home and family -- *home* itself, *nests, ancestors*, and *exile*. There are metaphors drawn from the world of *drama. Magic. Love. Architecture*. In every case, what we know is used to bring us to a deeper understanding of what we have not known -- maybe cannot fully know -- and arouse the emotions that accompany that understanding.

It should be noted how deeply normative it is, this work of the metaphor. Metaphors shape how we view the world, and worldviews shape values. If this is the way the universe is -- so like a flower, unfolding. So like an ocean, embracing. So like bread, nourishing. Then, like flowers and oceans and bread, the universe astonishes, embraces, and nourishes us. It takes on their meaning. It takes on their value. It becomes an object of love. And love is rich with responsibilities of care.

Metaphors of meaning. So what begin as metaphors of description sometimes become metaphors of meaning, and sometimes even the meaning itself. Amid the richness of metaphoric description, there are two central metaphors that become essential to the meaning of the story. Their flow propels the entire journey of the universe. They shape the narrative of the universe journey and carry it from the realm of the purely descriptive into the worlds of ethical and aesthetic value. In fact, they are so essential to the construction of the meaning of the universe that at some point, they are no longer metaphors at all. The familiar entity and the unfamiliar entity are so similar that they cannot be distinguished.

One such metaphor grows from the analogy between the universe and a living organism. The other sings in the analogy between the universe and music.

The analogy of the living organism. Through the chapters, the language of breath and blood, birth and death, dream and awakening, egg and infant, continuously evokes an image of the universe as an organism, maybe even a conscious organism. Like an organism, the universe breathes in and out, beating the slow pulse of expansion and contraction. Like an organism, the universe is fecund, giving birth to itself. Like an organism, it is transformed and reborn in new forms. Like some organisms, the universe is awakening to itself, finding meaning in its own generation and beauty in its own gleaming. It is alive. It is intrinsically valuable, which is a philosopher's way of saying, it is sacred. Not metaphorically. Truly.

The analogy of music. Nor is there any mistaking the point that the universe is a beautiful process of creation moving through time, like music. This is the second essential metaphor of the Journey of the Universe. Through the orchestration of matter and energy, the universe resonates like a tuning fork, like a lyre, in vast, ringing harmonies. The harmonies are continuously created and continuously changing in the deep rhythms of time, ringing in the emptiness of space. This is a soul-thrilling "Ode to Joy," the vibrating crescendo. This is beautiful, the dance of particles in the *basso profundo* hum of expanding suns. And what does it mean to be *like* music? Or, perhaps the better question becomes, what does it mean to *be* music? One might think it's a miracle, the way a musician creates something so beautiful out of nothing but vibrations and time. Could the genesis of the universe be any less beautiful or astonishing?

The End of Metaphor

And then humans appear on page 88 of the Journey of the Universe, and metaphors all but vanish. The story of the genesis and spread of humanity across the face of the earth is told without allusion. For pages and eras, there are no analogies. Maybe there is no need for them now. With events a matter of human memory or a matter of record, maybe we understand that part of the story all too well.

When metaphors reappear in the story only a few hundred years in our past, they clatter and grind in a smoky sky. That is when humankind began to understand the world in the metaphors of mechanism and matter. The universe is like a clock -- a cold, lifeless, static mechanism. Everything in the universe is material, even animals, which are machines too, designed to cry out when prodded, the way the cast-metal bird emerges to crow when the cog trips the lever. Gleaming like milled steel, the night sky echoes to the squeal of gears and the strike of metal on cold dead stone. Like a machine, "a physical system that focuses energies toward satisfying human desires" (99), the Earth has no meaning or value beyond its usefulness for human ends. Or so the metaphors would have us believe.

Just as an argument by analogy can be valid or invalid, any metaphor can be strong or dangerously misleading. Analogical arguments fail when the assumed similarity is not strong enough to support the inference – when two things that seem alike are not so much alike, in fact. The arguments fail as well when the analogy is based on spurious, not essential, similarities.

Logicians tell us that there are several ways to refute a false analogy. We can point out dissimilarities between the known and unknown entities. We can offer a counter-analogy. Or

we can *extend the analogy*. To extend the analogy, one tentatively grants the similarity: Yes, let's assume for the sake of argument that the universe is a machine. Then one draws conclusions from the analogy, until, as obviously false conclusions accumulate, the author of the analogy renounces it entirely. Any argument that reaches a false conclusion has either a false premise or an invalid form.

It is possible to understand the last several hundred tragic years of human history as an extension of the analogy between the universe and a machine. If the universe is simply a machine, then it is no more deserving of respect than an Oldsmobile. It cannot be harmed in ways that a skillful mechanic cannot fix. It does not evolve, except by human invention. The rules that govern its movements are not those that govern humans; we are exceptions to the rules of the universe. If the universe is a machine, no part is irreplaceable; any part can be replaced by another. If the universe is simply a machine, it cannot be desecrated. It cannot be loved.

Only now do we understand, to our sorrow, that all these conclusions are false. And so we approach the heart-breaking *reductio ad absurdum* of a catastrophically misleading metaphor.

Metaphors that Resound with Life and Joy

The Journey of the Universe offers new metaphors to help us grasp a reality far more beautiful and astonishing than that described by the machine-analogy, and to help us understand what that new reality asks of us. This is the book's power and importance. If the universe is like music, how shall we understand what it means to live inside its song? If the universe is like a creative being, how can we participate in the beauty of its unfurling? What does it mean to be part of the mysterious unfolding of the universe, to have the ability to imagine and rejoice in that flourishing? If we are embedded parts of the creative surge of the universe – we and the flowing of water and the growing of pines -- what does that tell us about how we ought to live? What new sorts of human goodness can emerge?

The Journey of the Universe ends with a gloriously hopeful argument by analogy between the past and the future. Over and over again, when the future of the Earth seemed bleak, "life exploded with an exuberance never seen before."

If the creative energies in the heart of the universe succeeded so brilliantly in the past, we have reason to hope that such creativity will inspire us and guide us into the future. In this way, our own generativity becomes woven into the vibrant communities that comprise the vast symphony of the universe. (118)

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