

Some in Power, Some in Pain:

A Symphonic Meditation on Humanity and Space

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Abstract

Conceived as a short symphony in four brief movements, this paper begins with a statement of optimistic confidence that, over the 21st century, humanity will move off Earth and begin the speciation of human (and transformed) intelligences throughout the solar system and beyond. This is countered by a second movement that fears that the weaponization of space and the military destruction of Earth from space may prevail instead, while a third movement argues that money spent on space should better be spent on ending world hunger and poverty, and preventing or ameliorating global climate change. The fourth movement urges the space community to use their exceptional talents to relieve hunger and avoid climate change, while also lifting humanity peacefully into the cosmos.

1. Introduction

I preface my thoughts with a poem by Wallace Stevens [Reference 1], entitled *Men Made Out of Words*:

“What should we be without the sexual myth,
The human reverie or poem of death?

Castratos of moon-mash -- Life consists
Of propositions about life. The human

Reverie is a solitude in which
We compose these propositions, torn by dreams,

By the terrible incantations of defeats
And by the fear that defeats and dreams are one.

The whole race is a poet that writes down
The eccentric propositions of its fate.”

Instead of presenting my eccentric propositions as a poem, I have fashioned my paper as a short symphonic meditation in four movements. The first movement is heroic, grand, expansive, and optimistic. The second is melancholy, bitter, and morose. The third movement is longer, more reflective, but nonetheless melancholy and forlorn. In the fourth and final movement, I return, as best I can, to a sense of heroism and grandeur, though muted by our reflection on the less savory aspects of humanity's features.

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2. First Movement

There can be no doubt that the interval between the middle of the 20th century and the end of the 21st should be regarded as one of humanity's most sublime and triumphant periods. After eons of captivity by -- in all senses of the word -- the gravity of Earth, humanity can loose the bonds that have held it captive for so long and spread onto surrounding planets, asteroids, and artificial platforms, and thence throughout the solar system to the cosmos beyond. This is what we are meant to do. This is why humanity exists.

My colleague, Ben Finney, suggests “that the use of technology to expand beyond Earth would be entirely consonant with the whole trend of human evolution. From the time the most adventuresome of apes left the tropical forest to seek a living in the grasslands of the African savanna, our ancestors have been inventing technology to adapt to new environments and to expand over the globe. There is a large techno-cultural distance between grubbing succulent roots from the soil of the savanna with digging sticks on the one hand and growing algae to provide both food and oxygen for Moon colonies on the other. And it is a long way from sailing canoes to interstellar arks. But ever since our ancestors started using tools to survive and eventually flourish in new environments, the pattern of evolution by cultural as well as biological adaptation has been underway. Although the prospect of traveling and living in space might seem 'unnatural' to many, it would represent a logical extension to the technological path our ancestors have been following for some 5 million years.” [Reference 2]. I do not see how we can, or why we should, resist that powerful urge. And though we have had many false steps towards the stars in our recent past, now is the time, and here is the opportunity for humanity to move boldly forward.

As Finney [Reference 2] observes even more provocatively, “if our descendants spread far and wide through space, the forces of evolution now braked on Earth will be released once more.” “Human evolution in space will hardly be limited to the birth of one new species. Space is not a single environment.... There are innumerable environments out there providing countless niches to exploit, first by humans and then by the multitudinous descendant species. By expanding through space we will be embarking on an adventure that will spread an explosive speciation of intelligent life as far as technology or limits placed by competing life forms originating elsewhere will allow.”

I share Finney's vision, as I am sure many of you do as well. And I share his excitement about our playing a small part at ISU in helping humanity toward that stupendously awe-inspiring future. I am absolutely certain that the reason that humanity has reached its current level of development is to move into space, with the assistance of artificially-intelligent and genetically-modified life forms of our own imagination and creation, in order to give intelligence, meaning, majesty, and (most importantly) humor to an otherwise meaningless

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and humorless cosmos. That is also, we believe and hope, why ISU exists, and why we are so humbled to be associated with it, and with humanity's overall space enterprise -- to leverage humankind into the stars. With that heroic cry, the first movement of my symphonic meditation ends.

3. Second Movement

Finney's vision, and mine, does not seem to be the one driving some space activities now. The world's leading space-faring nation seems bent on weaponizing space as quickly as possible. One proponent of the militarization of space [Reference 3] has recently declared: "This notion that space is going to remain a peaceful area in the future is absolutely putting our heads in the sand. It is just a fact of life. The fact of the matter is man is a warlike being. That's the nature of the beast, and we just can't be naïve about it."

Is that true? Is "man" inevitably a killing, or be killed, creature? Is the active militarization of space inevitable, if there is going to be any space activity at all? Is it foolishly naïve to pretend otherwise -- much less to speak out against it? Is the only sensible policy in accordance with our killing nature that one strives to be the first to militarize space as fully and as completely as possible? And if the answer to each of these questions is "yes", should we encourage such a beast to spread his warlike genes and destructive technologies throughout the cosmos? Yes, you say? Did you say yes?

On 1 May, 2001, another leader of the great global hegemon asserted [Reference 4], "We need a new framework that allows us to build missile defenses to counter the different threats of today's world. To do so, we must move beyond the constraints of the 30 year old ABM Treaty. This treaty does not recognize the present, or point us to the future. It enshrines the past. No treaty that prevents us from addressing today's threats, that prohibits us from pursuing promising technology to defend ourselves, ...is in our interests...."

And so, military and civilian policies, processes, personnel, and budgets long kept separate, at least formally and officially, are being joined as space for the peaceful benefit of all humanity transforms into space for the benefit of whoever weaponizes it first, so that after all the Star Wars have been fought and the last warhead has blown to smithereens the stupidity of peaceful naïve innocence, someone can point to the encircling debris of a radioactive, smoldering planet and say: See, I told you so. Man is a warlike creature. We won! We're one. We're number one. And with that melancholy, if somewhat self-righteous, sigh the second movement comes to an end.

4. Third Movement

But whether for war or for peace, aren't all space programs a total waste of money? There are so many, so much more urgent, tasks before us to which we should turn our time, talents and money.

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More than 40% of the people living in South Asia and Sub-Saharan Africa today struggle to exist on less than US \$ 1 per day [Reference 5]. One third of humanity lives in relative abject poverty. In every city in the world, at every minute of the day, precious lives are lost to hunger and abuse. In even the most advanced cultures, women at best live their lives in the shadow of men. Everywhere, men and women are tortured or killed for the color of their skin, the slant of their eyes, the smell of their breath, the shape of their dress, the fancies of their god.

Should we not spend our money on feeding the hungry, teaching those who wish to learn, and erasing sexism, racism, and religious intolerance instead of wasting talent and resources on stupid dreams of spaceflight and of a billion species spawned from humankind spreading throughout the cosmos?

Environmental problems loom -- global warming, sea-level rise, water shortages, new and renewed diseases -- and are being massively ignored. People, often so-called leaders, who profess to have family values, and to care for their children and grandchildren, prodigiously waste resources and obligate future generations to clean up and to make do after them without the slightest tinge of awareness, much less of guilt.

This may be nothing new. From the beginning of time, Ben Finney's statement to the contrary notwithstanding, we humans seem to have made a practice of moving to a new environment, overpopulating and exploiting it to exhaustion, and then either dying out locally, or moving on to other new environments, or inventing evermore powerful technologies by which to cope, exploit, destroy, move on, or die out. The only thing that is new now is that we are doing this everywhere, in all arenas, on a global scale, and in ever-shortening intervals of time.

Peter Vitousek [Reference 6] observes: "All organisms modify their environment, and humans are no exception. As the human population has grown and the power of technology has expanded, the scope and nature of this modification has changed drastically. Until recently, the term, 'human-dominated ecosystems' would have elicited images of agricultural fields, pastures, or urban landscapes; now it applies with greater or lesser force to all of Earth. Many ecosystems are dominated directly by humanity, and no ecosystem on Earth's surface is free of pervasive human influence."

" The global consequences of human activity are not something to face in the future -- they are with us now. All of these changes are ongoing, and in many cases accelerating; many of them were entrained long before their importance was recognized. Moreover, all of these seemingly disparate phenomena trace to a single cause -- the growing scale of human enterprise. The rates, scales, kinds, and combinations of changes occurring now are fundamentally different from those at any other time in history; we are changing Earth more rapidly than we are understanding it. We live on a

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human-dominated planet -- and the momentum of human population growth, together with the imperative of further economic development in most of the world, ensures that our dominance will increase.”

“In a very real sense, the world is in our hands -- and how we handle it will determine its composition and dynamics, and our fate.” So the conclusion is clear: we humans are planet eaters! Should we encourage our kind to eat more planets than this one tiny easily-digestible Earth? But Shakespeare exclaimed [Reference 7]:

“What a piece of work is a man!
How noble in reason! How infinite in faculty!
In form and moving, how express and admirable!
In action, how like an angel!
In apprehension how like a god!
The beauty of the world!
The paragon of animals!
And yet, to me, what is this quintessence of dust?”

Quintessence of dust? I think that if Shakespeare were writing today he might well say instead:

What a piece of shit is man!
How haughty and deficient in reason! How finite in faculty!
In form and moving, how self-centered and self-absorbed!
How smugly he views himself to be a God!
But how the animals of Earth scatter before him in fear
That he soon will reduce them to the quintessence of dust,
And the cosmos back to the primal speck
Whence the universe began!

Yes, perhaps, rather than “living in a million different places across the galaxy” as Freeman Dyson imagined [Reference 8], we humans deserve to be smothered in our cradle, Earth, by our own profligate waste before we are able to befoul the Universe as well. And with that disconsolate chord, the third movement grinds to an end.

5. Fourth Movement

But wait! These ethical thoughts and philosophical concerns come from we humans ourselves. We are the ones who worry about our powers, both frail and mighty. We are the ones who conceive of the notion of good and evil, and well we know that, while we are fully capable of good or evil, we are fully capable of good! And you? You in the space industry are especially skilled at addressing and solving complex problems. That is your forte. It was you who grasped a long-cherished human dream -- to fly to the Moon -- and developed the hardware, the software, and most importantly the “orgware” that

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transformed that impossible dream into a feat so seemingly easy and routine that we have not even bothered to duplicate it again. Go to the Moon? Been there! Done that! That was granddaddy's dream. What's new?

You have talents rare indeed among your fellow beings. You possess a way of looking, measuring, organizing, and achieving that enables you to make dreams come true. Few others can do that. Poets, writers, artists, entertainers, merchants, doctors, lawyers, bureaucrats, politicians, soldiers: all of these can dream, all of them can complain, all of them can destroy. Destroying – killing -- is child's play.

But organizing, building, achieving -- oh, that is a rare grown-up talent indeed. And it is your talent. Use it wisely. So I challenge you to envision, design, and create programs that seek to solve our massive social and environmental problems on Earth as well as to propel humanity peacefully into the diverse environments of space.

There is no doubt that you can do that. Solving hunger and poverty, and redesigning industrial and consumer processes, are challenging, but by no means insurmountable, technical problems. There is no real shortage of food and wealth on this planet! There is no real need for millions to die hungry every day and for two million more be born hungry to replace them. It is no more difficult to end world hunger and to arrest global warming than it was to go to the Moon, or than it will be to go to Mars in peace and diversity, as we must.

I urge you to return to that vision of your role in society proclaimed long ago by Percy Mackaye [Reference 9]: “The tribes of man are led toward peace by the prophet-engineer.” The Prophet-Engineer! But will we turn our impressive talents to ending hunger, poverty, and global change while achieving peaceful uses for space? Or will we choose, instead, to be whores to power?

6. Coda

Pat Humphries [Reference 10] has introduced a modern folk song recently that is a suitable coda upon which to end my symphonic variations. Consider Humphries' lyrics in the light of my challenge that we become once again prophet-engineers enabling humanity to live in abundance, identity, and security, as well as to journey peacefully throughout the cosmos.

“We're all living by a great big river.
We're all washed by the very same rain.
We are swimming in the stream together,
Some in power and some in pain.

We can worship this ground we walk on,
Cherishing the dreams that lie deep inside.

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Loving spirits will live forever.
We're all swimming to the other side.
.....
When we get there we'll discover
All the gifts we've been given to share
Have been with us since life's beginning
And we never noticed they were there.
We can balance at the brink of wisdom
Never recognizing that we've arrived.
Loving spirits will live together.
We're all swimming to the other side.
Loving spirits will live forever."
We're all swimming to the other side."

Or, if that is just too saccharin for a hard-nosed group like this, consider the words of Oscar Wilde [Reference 11] who once observed, "We are all in the gutter, but some of us are looking at the stars."

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