

Isaacson 1980 Aspirational Statement – Space Exploration

By Bob Krone

Dr. Joel Isaacson and I were members of the Space Exploration Team for the 1980 NASA/IEEE Summer Research at the University of Santa Clara, California. The research task was to define Advanced Machine Intelligence, then superimpose that definition over plans for future Space missions. As a Professor of Computer Sciences at Southern Illinois University and Founder of Isaacson Machine Intelligence he took a lead role in the definition subsequently used by the Study Group.¹

I was going through my extensive files on the work of Dr. Isaacson because of our *Journal of Space Philosophy* publications of his discoveries in *Nature's Cosmic Intelligence*.² I found his hand written notes, dated July 14, 1980, at the University of Santa Clara and titled "Aspirational Statement – Space Exploration." It follows:

¹ The report from that 1980 Summer research is NASA Conference Publication 2255, *Advanced Automation for Space Missions*.

² Joel Isaacson, "Nature's Cosmic Intelligence," *Journal of Space Philosophy* 1, no. 1 (Fall 2012): 8-16, www.bobkrone.com/node/120.

Aspirational Statement - Space Exploration

Looking at the physical evidence, namely the number of galaxies in our universe, the size of our own galaxy, the number of stars in it, etc., etc... we must form the hypothesis that the single most prevalent "thing", or element, in the universe is not matter or antimatter, nor energy, nor other things of this sort; the single most prevalent element in the universe is... Intelligence and its various manifestations, including intelligence behaviour, communication and messages.

Our inability, so far, to comprehend ~~or~~^{or} detect that intelligence is, in our opinion, one measure of our inferiority as an intelligent race.

To the extent that we shall overcome that inability... To the extent that we shall become successful in harnessing true intelligence in our artifacts, to that extent we shall grow into a truly intelligent race. Our mission, therefore, to conceptualize, design, and construct truly intelligent machines is, in our opinion, coincident with our innate and deepest drive to transform ourselves into truly intelligent beings worthy of membership in the intergalactic community. We want to belong! We want to become full-fledged citizens of the universe!

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That is a truly remarkable statement made 44 years ago when what was known about the universe was mass, energy, gravity, and planetary motions – not intelligence. The search for extraterrestrial intelligence (SETI) had discovered nothing by 1980. And what is even more relevant is that Dr. Isaacson would not change a word of that *Aspiration Statement* today in 2014. His personal research and discoveries in the 1960s and 1970s formed those beliefs and convictions written in 1980.

Now readers have his publications beginning in 2006 that describe the science of Dr. Isaacson's discoveries and research over the past fifty years (see his "Nature's Cosmic Intelligence").

Following are some summary slides from past presentations or communications either by Dr. Isaacson or about his work:

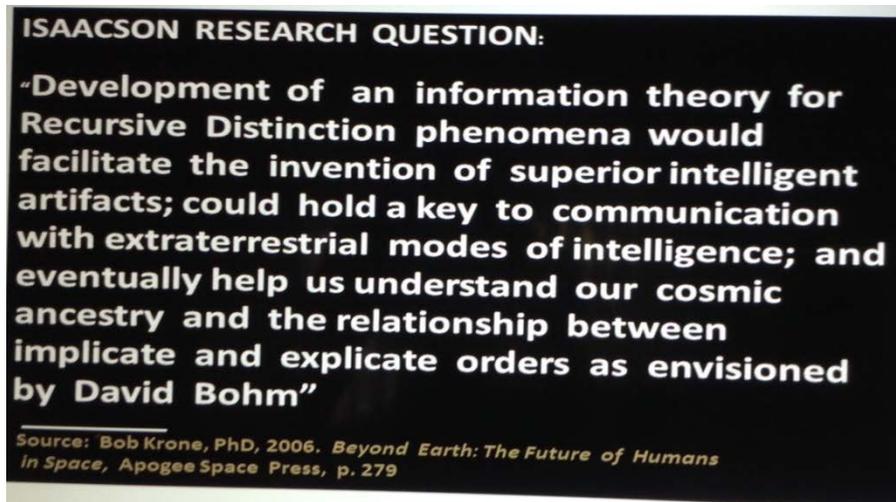
Intelligence

Science has no agreed definition of intelligence other than "*the capacity to learn from experience.*" Requirements for Advanced Machine Intelligence are: 1) assessment of environment; 2) Analysis of data; 3) Hypotheses and theory formulation; 4) alternative futures judgment; 5) System self maintenance for survival; 6) decisionmaking.

THE ISAACSON NATURAL AND UNIVERSAL INTELLIGENCE DISCOVERY

> "Recursive distinctioning is fundamental to all perception, and, by extension, to cognition and intelligence ... that finding is advancing as a law of nature, perhaps on a par with gravity."

> Dr. Joel Isaacson, e-mail to Bob Krone 20 April 2011. *Journal of Space Philosophy*, Fall 2012 & Spring 2013.



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About Dr. Joel Isaacson: Joel Isaacson has pioneered in RD Cellular Automata since the 1960s. Recursive Distinctioning (RD) was rooted in studies relating to the analysis of digitized biomedical imagery. Dr. Isaacson utilized NASA's computing facilities at the Goddard Space Flight Center in Greenbelt, MD for the initial stages of this research. His research has been supported over the years by DARPA, SDIO, NASA, ONR, USDA and a good number of NIH institutes. Isaacson is Professor Emeritus of Computer Science, Southern Illinois University and Principal Investigator of IMI Corporation.

He meets every criterion of scientific excellence. His first discoveries were at Goddard Space Flight Center in 1964. His patent was approved 25 August 1981, but he did not publicize it until 2006 because he continued to validate his discoveries and to have them confirmed by global information scientists. With his publications since 2006, Dr. Isaacson is beginning to make a huge contribution to Cosmos understanding. Mass and energy are well known. His discovery that our universe contains information and intelligence in a process that is basic also to human perception and cognition is a scientific knowledge paradigm shift.



About the Author: Dr. Bob Krone is the President of Kepler Space Institute and Editor-in-Chief of the *Journal of Space Philosophy*. Dr. Krone is on record stating his fortunate professional and personal rewards from his opportunity to be a colleague of Professor Isaacson beginning in 1980, when they shared a NASA Summer Research project, and continuing to 2014.