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Toward the Cosmic Brain

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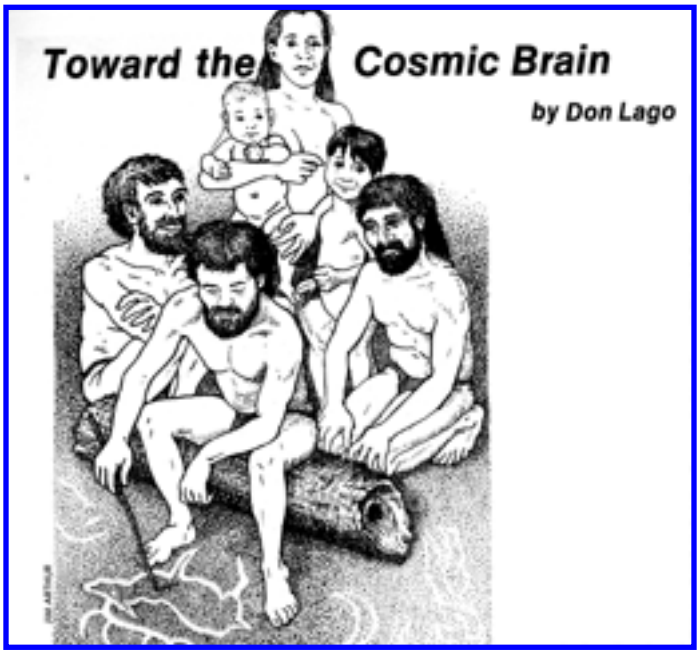


Many thousands of years ago, in a scene that must have been repeated many times in human history, a man quietly resting on a log grasped a stick and began scratching in the sand at his feet. He slowly moved the stick back and forth, carefully guiding it through curves and straight lines. Then he lifted the stick aside. He gazed upon what he had made, and a gentle satisfaction lighted his face. After a few moments his foot reached out to stir the sand, erasing the marks he had made upon it. Again he moved his stick over the sand and again he erased his markings and made new ones. Other people were resting nearby, and as they noticed what he was doing, a few of them gathered around to watch. Each time the man finished a drawing, the smile that appeared on his face would appear on theirs also.

This game of making images of familiar things held a strange fascination. There was almost a magical power in being able to conjure up well-known shapes out of nothing. A few twists of a stick could turn an ordinary patch of sand into something quite different. With a slight rearrangement of its grains, sand became a deer or a man or the moon. Though there might be no deer around, humans would still see one before them. Though the moon might not be up, humans would recognize it in the sand as easily as they recognized it reflected on the surface of a lake. Of course, these images were not exactly conjured out of nothing. The moon in the sand was

reflected from a different sky: the massive firmament within the human head. The deer that magically appeared from nowhere had been lurking in the thickets of the human mind all along. Humans were taking their own thoughts and pressing them into solid form outside the head. The person guiding the stick felt a sense of self-revelation as the image inside him suddenly appeared before his eyes. Those watching felt a small thrill of discovery each time an image flashed inside them to match the one forming outside. There was power and fascination in this game, and humans returned to it again and again.

This small band of humans didn't realize the profoundness of their simple act of making images in the sand. However compelling it might have seemed to them, they could not have felt how important it would be for their species. They and others like them were beginning one of man's most liberating discoveries. The images they left in the sand would soon be swept away by the wind, but their game would slowly grow through the generations until it had remade the human race.

When man was new in this world he lived within a prison that was himself. Each human mind was born into the isolation of its own skull, and there it had to remain. Those who would have been philosophers wandered mutely over their world. Each mind was locked in the deep loneliness of its own skull — and sometimes suffocated there.

Only slowly did man fashion keys to unlock the doors of his skull and open the consciousness of one person to every other. These keys were mere puffs of air — vocal symbols. Their development to the point of embodying the intricacies of human consciousness was only the first step of man's liberation from the prison of his skull. The next major step was the creation of symbols more enduring than sounds. Words spoken into the air quickly dissolved into nothing unless a mind was present to receive their meaning. But when man developed writing he would be able to make his thoughts last as long as stone or paper or microfilm.

The development of writing greatly expanded the liberation begun by spoken language. Now minds could receive nourishment from other minds far too distant to be heard or spoken to — distant both in place and time. A thought born within a single skull could leap from mind to mind, slowly spreading until it was flickering in every cranium on the planet. The awareness one person developed through great effort and seeking could become another person's awareness in a moment. Great

thoughts and feelings could live and give life long after the minds that created them had died. Philosophers dead for a thousand years could still instruct each new generation. The experiences of a hundred generations of mankind could be compressed within the mind of a youth. Through the generations this enriching of minds has gradually grown larger and swifter. Once it was very slow indeed, but as ideas trickled back and forth new ideas arose that helped to speed the flow: clay tablets, paper, the printing press, radio and television. And as technology evolved, thoughts were embodied in forms even stranger than puffs of sound or figures in sand or books; now they became the dots and dashes of Morse code, electromagnetic waves bouncing through the atmosphere, and the binary language of computers.

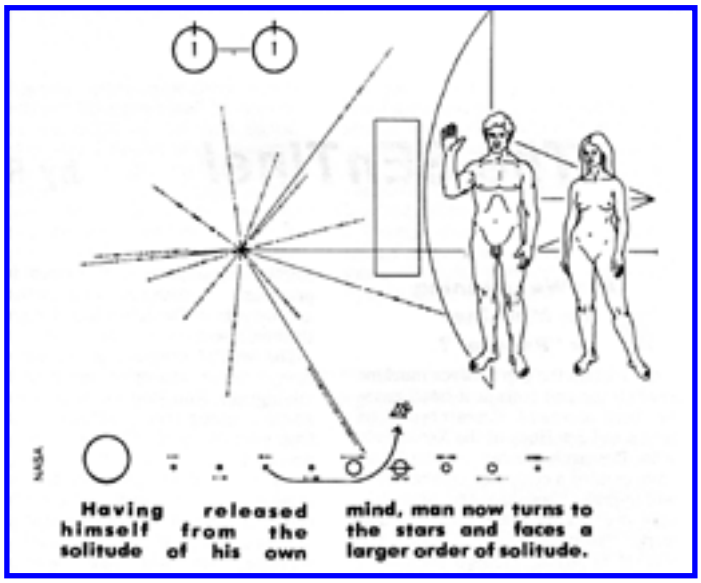
When man had covered the whole planet with a swarming interchange of consciousness, he still was not finished freeing himself from his isolation. Now he was only ready to begin working his way out of a larger isolation. This was not the isolation of individual minds — but of whole civilizations. The silence he would have to fill was much deeper than that of air. This is the silence of space. The distances he would have to bridge were much vaster than those separating human skulls. These are the distances to the stars.

Civilizations arising at widely scattered points in the universe are far more isolated than primitive humans ever were. Profound thoughts swirl around the surface of a planet and never leave the cradle where they are born. The insights of philosophers never escape the atmospheric cranium of their planet. Each civilization is born into the solitude o£ its own planet, and many never escape it.

Having released himself from the solitude of his own mind, man now turns to the stars and faces a larger order of solitude. The whole of Earth is a giant skull holding the human mind in a terrible muteness and lack of nourishment from outside. With his local silence filled, man is ready to grope his way into the greater silences separating civilizations. This task will be much harder, for man doesn't know whom he is seeking, or where they may be.

To send his thoughts across space, man has to embody them in symbols. And what kind of symbols do you think he would chose? He has had tens of thousands of years to develop more and more sophisticated symbols, moving from crude pictographs to ideograms to phonetic signs, branching off into syllabic systems and

alphabetic systems, evolving complex grammars, inventing Morse code and computer language. With so much learning to draw from, what super-sophisticated symbols would man chose to carry his consciousness into space? Pictographs.



Man's first efforts at sending his thoughts beyond his own planet have taken a very ancient form. The first message, on a plaque aboard two Pioneer spacecraft launced in 1972 and 1973, featured a simple picture of two humans, one male and one female, the male holding up his hand in greeting, and drawings of the solar system, with a spacecraft emerging from the third planet. The next message, broadcast from the Arecibo radio telescope in 1974, included images of a radio telescope, the solar system, a DNA molecule, and a human. While it is true that this second message involved electromagnetic waves and a system of binary pulses to encode its meaning, these sophisticated devices were only employed to send a primitive picture.

All the accomplishments since man first scribbled pictures in the sand have led us right back to where we began. The long development of writing — from that first pictograph all the way up to the binary code — has made it possible for us to begin making pictographs again. We have simply graduated to a higher level of isolation, and now we have to start all over by mastering the most elementary skills at this level. The sophisticated symbol systems we have worked out among ourselves will not help us penetrate the minds among the stars, for those minds will not recognize our symbols or feel the meanings they were meant to evoke. To communicate with very different species we can only return to the simplest form of symbol available and work upwards from there.

Once again we are using pictographs to join brain to brain, but now the brain we are trying to reach is much vaster. Long ago human brains were isolated from one another, but now we have joined our brains in a planet-wide flow of thoughts.

Today we are trying to break out of the isolation of our planet and join a flow of

thoughts that may fill the whole universe. Space may be swarming with energies carrying the thoughts of countless civilizations; thoughts may be flowing between galaxies like impulses leaping between neurons. Billions of galaxies may be involved in a massive metabolism of consciousness. **The cosmos may be like a giant brain, a brain unbelievably rich in ideas and feelings and experiences.** Thousands of years after we used pictographs to join isolated brains together, we now are using them to connect human brains to the cosmic brain.

Don Lago is a frequent contributor of articles and poems to **COSMIC SEARCH**. His article "Circles of Stone and Circles of Steel" was the First **COSMIC SEARCH** Award Winner, appearing in the March 1979 issue. His biographical sketch and photograph appeared with that article. Later articles were "A Hymn to Life in the Universe" in the Fall 1979 issue and "In The Time Machine" in the Spring 1980 issue. The latter article was subsequently reprinted in condensed form in **Readers Digest**.

A short version of this appeared in Science Digest where other articles by Don Logo have also been published.

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