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**COVER:** Brain sample containing a "plaque" (a core of abnormal protein surrounded by paired helical filaments). Along with twisted fibers in neurons, plaques constitute a major indicator of senility. Although progress is being made in diagnosing and in probing the causes of this devastating disease, vastly more needs to be learned about it before it can be effectively treated or prevented. See p. 218. (Photo: Meta A. Neumann, St. Elizabeth's Hospital, Washington)

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Editorial and Business Offices  
1719 N Street, N.W.  
Washington, D.C. 20036

Subscription Department  
231 West Center Street  
Marion, Ohio 43302

Subscription rate: 1 yr., \$12.50; 2 yrs., \$22; 3 yrs., \$30. (Add \$2 a year for Canada and Mexico, \$3 for all other countries.) Change of address: Four to six weeks' notice is required. Please state exactly how magazine is to be addressed. Include zip code.

Printed in U.S.A. Second class postage paid at Washington, D.C. Title registered as trademark U.S. and Canadian Patent Offices.

Published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington, D.C. 20036 (202-785-2255) TWX 710-822-9433 SCIEN NEWS.

# OFF THE BEAT

## Voyager's message: Record reviews

The parable of the five blind men describing a camel (with diverse results) certainly makes a valid point, but there can be many, often less cynical reasons for different observers to have different impressions. Suppose, for example, that the camel's describers were an artist, a veterinarian, a butcher, a weaver and a polo player. Then imagine the results if a group of people were given the task of describing the entire world.

The article in SCIENCE NEWS describing the record of images, languages, music and other sounds sent into space aboard each of the Voyager spacecraft (SN: 8/20/77, p. 124) has produced a hint of what might happen; indeed, in a way it *has* happened. The record was conceived as a message to any extraterrestrial civilization that might intercept the spacecraft after they leave the solar system on the road through interstellar space. The idea is tantalizing to say the least, and many of our readers were moved to make their own editorial or philosophical comments. There may well be as many versions of what such a message should contain as there are earthlings, and even the response we've gotten would fill our limited "letters" column for weeks. A sample, however, is illuminating.

The response was largely in favor of the idea of at least sending the message, although many readers would do it differently. Only two letters opposed the whole idea, one of them objecting to "sending messages into space revealing the earth's location and abundance of life." (The letterhead was that of an environmental research institute.) "Human history," the writer maintained, "shows that whenever a culture which regards itself as advanced discovers a less advanced culture, the less advanced one almost invariably is destroyed."

A less xenophobic objection was voiced by an Illinois reader, who expressed the view that the project's mentors "are justifying the construction and launch of a complex space vehicle, of immeasurable worth by itself to another civilization, by including a 'down-to-earth' package to placate the romantic. Obviously," he wrote, "the message is designed for those beings on the planet of its origin [rather] than any beings on the supposed planet of destination." Although Voyager was in the works for years before the message was even proposed, the compilers of the message openly admit that part of its purpose is to reach earthlings. The hope is that earthly "recipients" not only will consider the possibility of alien beings, and of the opinions they might form from a selected

portrait of the earth, but also will simply give some thought to a global view of Home.

A reader from Texas suggested that it might better represent life on earth to include some examples of the seamy side. "We might not be proud of it," he wrote, "but without picturing our violence the record tends to be distorted. Rather than 'old man with dog and flowers,' I would picture a bombed city or some of our 'self-defense' army arsenals. We should be honest enough to show the universe what fools we are."

Several readers objected to the lack of any images of nude human beings. (The National Aeronautics and Space Administration, sensitized by criticism of the plaques on the Pioneer 10 and 11 probes, vetoed the idea.) Taking the extraterrestrial view, Clinton C. Brooks of Owings Mills, Md., sent along the following "excerpt from a report of the Academy of Psychiatry, Capricornus Division, concerning the message in the alien spacecraft:"

... *One of the most striking features is the absence of unclothed figures of the species which presumably sent the spacecraft. This suggests to us that the message might have been constructed during a period of their civilization which corresponds to our near-fatal stage eight generations ago. During that time, emotional reactions of large numbers of our species frequently dominated the decision-making process instead of logic and reason. If we had not reversed this state of affairs, it is believed that our civilization would not have survived. If this surmise is correct, we can only speculate as to whether or not the alien intelligence successfully transited this stage of their evolution and yet exists today.*

Some letters commented more on the methodology of selecting and arranging the record's contents than on the choices themselves. "... I couldn't help but wonder," wrote Mrs. Peggy J. Noonan of Edgewater, Colo., "if our own scientists, now or in the future, would be able to decipher the same bits of information from an alien culture ... The [greetings, sounds and music] are very nice and may be informative to listeners who *already* understand those sounds, but they offer no sequence pattern, no Rosetta Stone, for an alien translator. How much more effective might it have been to use one set of sentences in just a few of the primary earth languages ... to offer a better foundation for translators?"

Of course there are also pictures. But, Mrs. Noonan asks, "wouldn't the probabilities of understanding have been vastly increased if the first visual images were of the Voyager itself (for a common point of reference), then a man with the Voyager (perhaps in the act of constructing it, showing size and creator-to-object relationships), followed by a view of the launch and an animated sequence depicting the path through space, each underscored with subtitles in three or four major earth languages read aloud? *After*

*Continued on page 221*

### ... Senility

working together, in order to produce senility? For instance, might senility be due to some inherited inability to metabolize aluminum properly? Intriguingly, Down's syndrome might be the result of a similar interaction because it too has been reported to have a genetic basis and because it too is characterized by abnormally high levels of aluminum in the brain.

Another challenge facing researchers is the task of coming up with some easy and accurate diagnostic test for senility. At present none exists, even with the sophisticated new computerized axial tomography. The problem is that the psychiatric and behavioral symptoms of senility, which are all doctors have to go on until death occurs, mimic those of numerous other diseases. For instance, silent depressives, like senile patients, suffer a defective memory and a high death rate. Victims of stroke, delirium, manic-depression and alcoholic dementia, like senility victims, can suffer impaired learning and memory. Normal pressure hydrocephalus, caused by tumor or head injury, can lead to a senile-like dementia.

Still another pressing question is why senile victims die prematurely. Is the cause of senility the same as the cause of premature death among the senile or is it separate—perhaps, pneumonia, weight loss or reduced resistance to infection that comes with self-neglect? Arthur Peck of the Jewish Home and Hospital for the Aged in New York City suggests a disturbing possibility—that the senile are woefully aware of their deteriorating mental and physical states and, not being able to do anything about them, experience a death wish. Martin Roth of the University of Newcastle upon Tyne in England agrees. "It looks like death from boredom."

Finally, do certain factors earlier in life (such as family history, occupational exposure, seasons and climate, life trauma, or personality differences) predispose one to senility later? No studies to answer these questions have been conducted to date, but one is getting underway—the Framingham study. Actually, the Framingham study was started in 1950, focusing on a population of 4,000 people in Framingham, Mass., and it has answered a number of questions about lifestyle and disease predisposition already, one of the most notable being the link between cigarette smoking and lung cancer. Now researchers will determine whether any of the Framingham population has succumbed to senility since the study started and, if so, whether certain factors in their lives might have predisposed them to this disease. If any links emerge, they will represent a step toward the prevention of senility.

Other valuable insights into senility should also emerge in the near future as NIH increases funding for senility research around the United States and as the NIA sets up a senility registry. □

### ... Voyager

these bases for deciphering our message had been established, then we could proceed to the list as given in SN, while we continued to use the translation-bridge-building method of 'read-hear-see.'"

She also raises another interesting possibility: "I wonder," she writes, "if any experts were consulted from the fields of deciphering dead languages, linguistic and communicative studies, communication with the mentally impaired, autistic, blind or deaf?" The answer is no, according to Cornell astronomer Frank Drake, who helped with the project. But, he says, such ideas would certainly be worth pursuing in the case of a more comprehensive message.

Still, regardless of its specific contents, the Voyager message tempts one to try seeing ourselves as alien recipients might see us. The following example—an excerpt from a "Report On Artifact Found Free-flying in Space"—was sent by Louise Ireland-Frey of Cedaredge, Colo.:

... Finally, High-placed One, there is a rubrous-metal disc and an odd article with a sharp-pointed awl or spine, to be used together. Several meteorites have dented these but not enough to destroy them. They appear to have been created, together with the entire artifact and its contents, in the dim past ages by some aniplant on an orb somewhat like ours but with a vastly greater intensity of heat and light. We could not have survived there.

One side of this metal disc contains noise-vibrations of diverse types. The meaning, if indeed there is meaning, escapes us, though we assume there must be meaning of utmost importance, else why should this have been selected to be thrust out into space? We sorrow at the thought that a perishing alien species attempted to cry into the depths of the Cosmos for help and the assistance never came. It would have helped us if the creator-aniplant had included a type of "prime-reader" or some very rudimentary instructions instead of hoping that this whirl-storm of noise-vibrations might be understood by any off-orb creature. When we ourselves send out messages, we test them first on aniplants of our own orb to see if our orb-fellows of other species can understand them.

The noises, however, are all grouped strictly in the mid-ranges. . . . Therefore, we believe this species must have had sensory organs limited entirely to the range of sound-vibrations represented. . . . But perhaps these creatures had other compensatory mechanisms. . . .

On the other side of the metal disc we managed to decipher picture-images of articles and creatures we take to be those common on the alien orb. A few are recognizable (as images of planets, diagrams of systems, etc., especially). Many are of strange figures, apparently all drawn as if viewed horizontally on a level with the object, not (as with practiced space explorers) from a higher level looking down, with shadow-studies providing horizontal configurations. This is very interesting, revealing that this species must have begun space

exploration only a short time before sending out this artifact. . . .

Our experts have studied the pictures carefully and with puzzlement. It is sad that these pictographs of the various aniplants do not show how much is carapace and how much is pile and soft matter, nor how much is reducible, how much elatable, etc. The [markings on the] earlier-discovered artifact [presumably one of the Pioneer plaques—J. E.], showing what we thought to be pictographs of constellations—inasmuch as the diagram of a sunplanet system was clearly discernable below—now appear to have been vastly enlarged (relative to the planetary diagram) pictographs of two of the aniplants shown on the rubrous metal disc!

We are of the opinion, after conferring together, that these are two rather similar species, both quite common on the orb, perhaps even like the creatures who made the disc and some of the other articles. Both have smooth carapaces and unfurred facial areas; both have pile on that aspect of the head-end that is apparently the end farthest from the planetary surface (if, as we assume, the figures are intended to be viewed as if from the horizontal). The pile must be equivalent of our fur-basins, but located on the upper aspect of the head-end, for the holding of the eggs or spores. . . . They show no signs of budding. . . .

If aliens can form their own opinions, how about earthlings? Many readers asked whether there is or will be a commercially available version of the entire message, pictures and all, and Columbia Records, which donated its production services to the original project, is working on it. The problems are considerable—the large number of recording companies that contributed music, for example—and Columbia says that it may be the beginning of 1978 before the product (probably two disks for the sounds and a booklet for the pictures and explanations) can be available. Interested readers may address comments—and they could help make a difference—to Rick Smith, Vice President of Business Development, Columbia Records, 51 W. 52nd St., N.Y. 10019. One suggestion, which Columbia is considering, is a proposal by Carl Sagan that all profits be donated to a proposed foundation for extraterrestrial research.

The interest of earthlings is important, of course, but it is still those hoped-for aliens that are the inspiration. Let Mrs. Robin G. Lee, a reader from Ocean, N.J., close this column:

Right now, today, the earth is the only home we have. Everything on earth is one, it is all part of the very stuff the stars and the rest of the universe are made of. We are all part of the universe, and it is part of us. I sincerely hope that some day, many hundreds of thousands of years from now, this message does reach some far away world. But will it really be that far away? They will be our relatives, for their world, too, will be part of the same universe that our world is a part of.

—Jonathan Eberhart