SPACE

Golden Rule Invalid in Space

The golden rule is a good guide for human relations, but for outer-space relations it needs changing. A new brand of legal specialists is working out the rules.

By ELIZABETH MIREL

➤ THE GOLDEN RULE will do for earthlings, but for out-of-this-world creatures it will have to be revised.

This is the conclusion of scholars of a Space Age legal specialty called metalaw. Metalaw is based on the belief that disaster would be wreaked upon the universe if man applied his own self-centered rules and regulations to his dealings with beings from outer space.

The idea of metalaw is as old, or as young, as the Space Age.

Meaning of Metalaw

The word was coined by Andrew G. Haley, a Washington lawyer-scientist, in 1956. It comes from the Greek meta, meaning beyond or transcending, and law, which comes from the Old English lagu, meaning a body of binding customs. Thus metalaw means law beyond our present frame of reference. Metalaw is the system for dealing with the beings we will encounter in our exploration of the vast beyond.

Much of the work on metalaw has been done by Mr. Haley, and it is summed up in his recent book Space Law and Government (New York, Appleton-Century-Crofts, $15.00).

The guiding principle of metalaw is to treat others the way they want to be treated, that is, to do unto others as they would have done unto them. It is a reversal of the golden rule.

But why should man give up the golden rule?

It is an eloquent statement of philosophy. Therefore all things whatsoever ye would that men should do unto you, do you even unto them: for this is the law and the prophets (New Testament).

It is a guiding moral principle that has been expressed by sages down through the years—from Confucius to Aristotle, from Seneca to Mohammed.

Even if it does not work all of the time, it is a worthy ideal.

The trouble with the golden rule is that it is too self-centered, or too anthropomorphic. If we apply the rules of man to outer space, we will be contaminating it with all our own earthly faults and foibles. We will be imposing our own standards either on peoples that do not know any better or on peoples that are superior to us.

This would have disastrous results similar to the Spanish destruction of native Mexican and Peruvian civilizations in the 16th century or to the American trampling on native Indian tribes during the time of the westward push.

But in addition, the upset to the balance of nature might be irreparable.

The idea and practice of giving up the golden rule is not exclusive with metalaw specialists. As Mr. Haley points out, many men have spoken the principle of metalaw without giving it that label.

Students of strange cultures try to understand "weird" or even "evil" practices of these lands in terms of their function and meaning for the people as a whole.

This way of thinking is called cultural relativism.

What the metalaw people are advocating is a kind of super cultural relativism. Like cultural relativists, we must not assume that our way of life is any better than the next fellow's, and, beyond this, we must not assume that our species, *Homo sapiens,* is any better than the next species, an imaginary Homo martian, Homo milky-wayan, or whatever it turns out to be.

Sounds fantastic. But the world of fancy is rapidly turning into the world of fact and we need a system to deal with it.

Just as the basic ethical principle is the golden rule, Mr. Haley explains, so when society got more complicated, the Ten Commandments came along. Just as in our complex modern world "we have so many rules we don't know what to do with them all," so when our society comes to include relations with extraterrestrial beings we will set up standards.

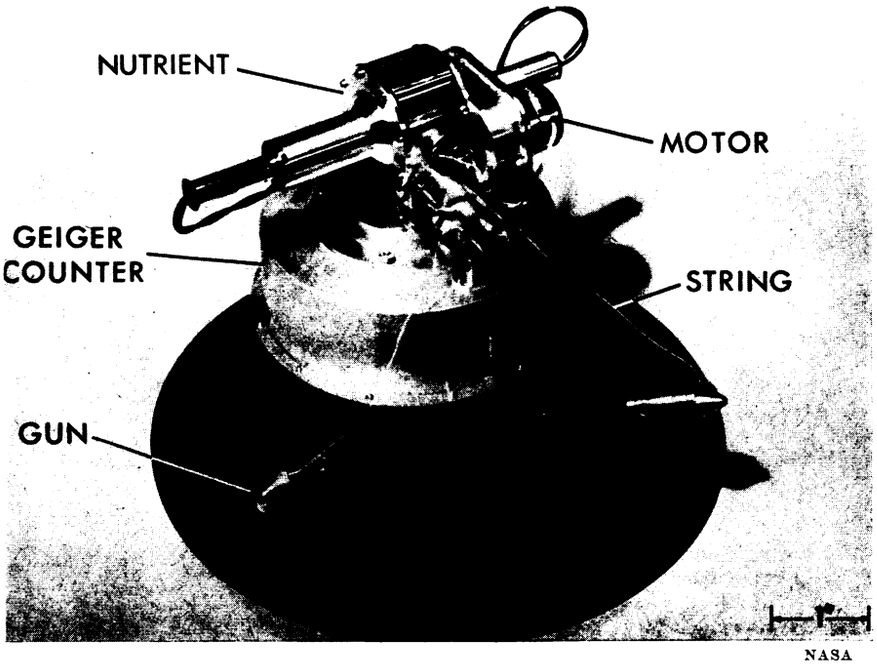
This day of reckoning may not be far away.

Life on Other Planets

Astronomy experts have assessed the possibilities of life on other planets and have found them quite high. Even using a very conservative estimate of the number of stars that like our sun are apt to have planetary systems but granting the many physical and climatic conditions that can support life, there are estimated to be 100 million million planets that are capable of supporting life. Many of them are assumed to have the same kind of plant-animal mutual existence set-up that earthlings do.

With our present level of technology, communication with these far-flung creatures would be impossible—even if we understood their language and even if they spoke a language to begin with. Distances are so great that it might require 100,000 years to get a message back and forth.

But if—and these are big if's—it is true that time moves slower for someone who is traveling close to the speed of light, and if vehicles for such travel could be devised, then a man could visit and return from distant planetary systems in the space granted



NASA

GULLIVER TRAVELS—This life detection device of the National Aeronautics and Space Administration called Gulliver will be used on the surfaces of far-off planets. Through the gun's bullets it sends out "sticky strings" which are then reeled back. The strings are drenched with a nutrient broth, enabling bacteria, if they are present, to grow on them. Results, speeded up by radioactivity, can be obtained within four hours and signalled to the earth.

by the human life. (Of course, the earth to which he would return would be many many years older than the earth he left.)

Because there are so many if's about outer space, and mostly because life in outer space has only been assumed and never contacted, the formulations of metalaw are still elementary.

Assumptions of Metalaw

But certain assumptions underpinning the laws can be made. According to Mr. Haley, these are:

1. Extraterrestrial beings are made up of the same elementary stuff as we humans are.
2. These beings are composed of many atoms and they can feel, move about and think.
3. Each of these beings has a "zone of sensitivity" and outside this zone activity by humans or others has no effect.

Some of the rules which follow from these assumptions are:

1. Landing on a planet where life is assumed must wait until it has been determined that injuries to that planet will not result.
2. Landing on a planet must be by invitation only.
3. Decontamination before landing on a foreign planet must be followed by decontamination before return to earth.
4. Communications lines must be left intact by efforts to establish and maintain contact with foreign planetary systems.

How these interplanetary and intergalactic rules will be formulated and upheld is a problem, considering the trouble we have with international and interstate relations.

But Mr. Haley is optimistic.

"After 500 years we finally executed a treaty on the high seas. After 4,000 years we have a consular treaty." A space treaty is "possible."

Possible U.N. Regulations

The United Nations is currently proposing to lay the guidelines for space activity. Passage of this proposal seems assured.

Someday, Mr. Haley believes, the United Nations may have jurisdiction over man's dealings with extraterrestrial beings. "If it can't do that then it has lost its purpose."

In the final analysis, Mr. Haley admits the impatient may think that formulating metalaw is like trying to make rules for a relationship with an amoeba. But if we are going to spread the crimes of mankind throughout the universe, he believes "it would be better to deprive mankind of the opportunity to explore the cosmos or indeed to leave the planet earth."

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BIOLOGY

Need Clean Spaceships

➤ UNMANNED SPACE SHIPS to Mars must not carry even a harmless organism. They must be far more germfree than the cleanest of hospitals.

The chances of landing one single organism on Mars must be less than one in 10,000 or even less than one in a million if astronomers make further discoveries about the environment of Mars before the proposed 1964 and 1966 Mariners take off.

L. B. Hall, on loan to the National Aeronautics and Space Administration from the U.S. Public Health Service, told SCIENCE SERVICE that he plans to change much of the sterilization technique on spaceships to methods of killing staphylococcal infections in hospitals. This means the use of dry heat.

Protection from earth organisms is necessary, not only for possible life on Mars, but to protect the health of people on earth later.

Harmless bacteria could mutate and be brought back to earth to play havoc with the public health.

Spacecraft to Mars is so designed that all its parts can still function after being subjected to intense dry heat sterilization.

"The only method we know of for reliable sterilization of interior masses such as plastics, vacuum tubes and transistors in Mariner B and C is dry heat," Mr. Hall said. Although sterilization of spacecraft surfaces can be done in other ways, the final sterilization, which must take place at Cape Canaveral just before flight, also should be dry heat.

He said the parts that cannot withstand the intense 145-degree Centigrade (293 degrees Fahrenheit) heat necessary for flight sterilization will be sterilized by other methods—surface parts can be sterilized with ethylene oxide and inserted into the spacecraft by sterile means. A man in a sterile plastic suit with air and exhaust hoses, who has been immersed in germicides, could do part of the sterilization.

Mariner C, which will be a fly-by, could make the trip to Mars in 1964, according to present estimates. Mariner B, however, probably cannot take off before 1966, since it will consist of a small landing capsule for life detection purposes as well as a fly-by.

Mr. Hall told the Association of Military Surgeons that "lunar landers" will be flown with low levels of microbiological contamination. This is because moon probes already have been designed and some are in the process of being built without heat-resistant parts.

The chances of earth organisms spreading and surviving on the moon are very low, scientists believe. In trying to maintain planet quarantine, however, every precaution is being taken.

"From the biological point of view," Mr. Hall explained, "we are more concerned with keeping spores off the spacecraft than vegetation cells. The vegetative cells will largely die by themselves over a comparatively short period of time, but spores are extremely hard to kill, and might survive for years under normal conditions."

A spore is the reproductive cell of specific lower organisms such as the tetanus germ. It is covered by a thick shell and survives great heat and cold, making it difficult to destroy.

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