

EXOBIOETHICS -- LEGAL PRINCIPLES FOR INTERACTIONS WITH NON-TERRAN SPECIES

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Bioethics evolved during the latter half of the 20th century as a set of quasilegal rules to govern the actions of one life form toward another in contexts when pre-existing legal rules did not seem to apply. Although bioethics usually arises in a health care context, it also covers the field of life sciences research, including animal testing.

As efforts to detect non-terran life proliferate, it becomes increasingly likely that exobiological contact will occur. However, there are no internationally agreed-upon standards for exobiological activities, and hence there is a vital need to elaborate a set of exobioethical principles to govern such activities. This paper merges current thinking in the fields of bioethics and SETI to produce a consistent and complete set of exobioethical principles of law. The paper concludes that bioethical principles such as autonomy, consent, beneficence and non-maleficence are relevant to exobiological contacts. The paper also concludes that bioethical rules governing animal research, if applied to exobiology, may be counter-productive. Hence the paper predicts that exobioethical factors will lead to a rethinking generally of the bioethics of human-nonhuman contacts.

Recent Discoveries Relevant to Exobiology

In the last few years of the second millennium since Christ scarcely a month goes by without a new planet being discovered outside our solar system. All such planets to

date have been gas giants. This makes it a scientific fact that Jupiter and Saturn like planets orbit other stars. Consequently, the likely hypothesis is that smaller earth-like planets exist as well among other stars. Given that life exists in virtually every niche yet found on earth, it appears as if the latest planetary discoveries provide a huge boost to the hypothesis that life exists off the earth as well – either in the discovered gas giants, or in solid earth-like planets that co-orbit a common star.

Universal Standards for Exobiological Contact

The O'Neill Theorem states that the universe is a friendly place because, were it not, the earth would have been conquered and used for resources long ago. Dr. Gerard O'Neill premised his theorem on trenchant *a priori* logic¹:

1. Given the vastness of the universe, life is certain to have evolved many times;
2. Given the survival benefits of technology, it is certain to be a concomitant of life;
3. Given the exponential benefits of self-replication technology, it is certain to evolve from technology;
4. Self-replication technology provides the means for scouting an entire galaxy without regard to limitations of time and space;

¹ G. O'Neill, 2081 (1981).

5. Self-replication technology could just as well kill off a planet's life forms or leave them alone;
6. Gaeans have not been killed off; ergo, the intelligent forces in the Universe have decided to leave us alone
7. Ergo, the universe is a friendly place.

While the O'Neill Theorem has obviously held true to date, we do not know that it applies to Gaeans in their dealings with other life forms. Gaeans have relied upon a doctrine of bioethical principles in their dealings with other life forms.

Bioethical Principles That Might Serve As an Underpinning for Space Law

Bioethical principles are currently denominated as autonomy, consent, beneficence and non-maleficence. The highest principle, autonomy, states that a life form should not be bothered absent a compelling reason. The second highest principle, consent, states that any bother imposed on the life form should only be with its informed consent. The third and fourth principles, relating to beneficence and non-maleficence, require that any imposition upon a life form be accomplished for the life-form's own benefit and not for the benefit of someone else. However, the term "benefit" is extremely plastic, and includes psychological benefits such as when someone volunteers to participate in a scientific experiment or to donate a kidney to benefit another person or community. The key proviso, though, is that any such volunteering be done pursuant to an informed consent.

It is clear that the bioethical principles are not applied the same to animals other than humans as they are applied to humans. For example, non-human mammals are readily

used as food. On the other hand, as a life form appears more human, we begin to insist that more and more of the bioethical principles apply. For example, we don't like to think about eating other primates. Life scientists also make substantial efforts to minimize the amount of pain they inflict on animals in research experiments, and to use the minimum number of animals to accomplish a given therapeutic goal.

With regard to indigenous peoples there is a growing feeling that bioethical principles apply with full force. It would be considered outrageous and a violation of international bioethical standards to put any indigenous community through involuntarily experimentation. On the other hand, it is well known that indigenous peoples suffer mightily at the hands of encroaching societies. Indigenous peoples have had to give up their privacy, and hence their autonomy, without ever being asked for their consent. Massive numbers of indigenous peoples have died as a result of unwanted intrusions into their lives. However, other indigenous peoples have welcomed intruders.

Application of Bioethics to Exobiology

If we were to be guided by bioethics in our search for extraterrestrial intelligence, the highest ruling principle would be to not contact another species unless they voluntarily requested contact, with well-informed knowledge of the consequences. This is simply applying the principle of autonomy to the exobiological context, well-informed by the terrible consequences on earth of inter-peoples contact without respect for autonomy. The fact of the matter is that once you make contact, you have lost autonomy.

The O'Neill Theorem appears to incorporate autonomy as a universal principle. Even though certain representatives of some societies are vigorously seeking extraterrestrial contact, there is scant evidence that Gaeans as a whole are well-prepared for the consequences of such contact. Indeed, there is a clear absence of "informed consent" on behalf of the earth at large. And, pursuant to the O'Neill Theorem, the galactic intelligences that do exist are assiduously avoiding contacting us for these very reasons. We haven't demonstrated a readiness for such contact with an expressed desire to abandon some measure of autonomy based on informed knowledge of the consequences.

Furthermore, in our own efforts to explore other worlds, we have shown some concern for exobioethics. If there were Martian life forms that might be susceptible to Gaeon viral infection, we probably did not hurt them due to heavy sterilization of our

Viking and Pathfinder spacecraft prior to their launch. Hence, we demonstrated a concern at least for non-maleficence.

Getting Ready for Exobiological Contact

There are as many diverse life forms here on earth as we are likely to encounter in space for quite some time. However, if we treated extraterrestrial life forms as we treat some Gaeon life forms with comparable brain mass to humans, such as Dolphins or Whales or Chimpanzees, then we are certain to make some fast enemies. There is an immediate opportunity to dry-run exobioethics on earth with improved treatment of at least the most cerebrally mature life forms. As we do so, we will have begun to demonstrate the kind of "informed consent" to justify participation in an interstellar community that is based on respect for mutual autonomy irregardless of one's genetic, cultural or planetary origin.