

mission payloads on orbit faster and by sharing launch and platform costs. They also offer faster ways to insert innovations to space technology, and testing them before incorporating them in more complex satellites.

Integrating these capabilities with existing commercial systems will present significant challenges and involve accepting new programmatic risks. Despite the advantages, placing national security and intelligence payloads aboard commercial satellites raises unique contracting, policy, and LOAC issues. Those who benefit from current acquisition paradigm systems can be expected to resist these changes, but new systems must be responsive to economic and resilience needs. In the end, hosted payloads will give the US Government new operational and architectural flexibility. They can enable the space community to affordably satisfy mixed architecture requirements over specific geographic areas, especially with regard to communications capacities. And they offer flexibility to pursue new means to obtain capabilities in a way that is presently difficult to do inside the Department of Defense.

# THE BIOCHEMICAL FOUNDATIONS OF EVOLVING METALAW: MOVING AT A GLANCE TO THE BIOLOGICAL BASIS OF SENTIENT “ESSENCE”

George S. Robinson\*

*The philosophic construct and motivation for all domestic and international space law derives from contemporary empirical interpretations of “Jus Naturale” upon which current definitions of Metalaw are premised, i.e., the underlying justification for humankind species survival. Humankind and its single cell predecessors have always been an evolutionary work in progress...and hopefully will continue to be*

## I. ANDREW GALLAGHER HALEY: THE GENESIS OF METALAW?

In his Categorical Imperative, Immanuel Kant asserted in 1788 that everyone should “act according to the maxim whereby you can at the same time will that it should become a universal law.”<sup>1</sup> This “principle” is generally accepted as the predecessor of the concept of “Metalaw” first introduced formally as such by

---

\* Dr. Robinson, retired from the Smithsonian Institution, is currently in private law practice, and serves on several boards of trustees and advisory committees. He received an AB from Bowdoin College ('60), an LL.B from the University of Virginia ('63), an LL.M. from the McGill University Institute of Air and Space Law ('67), and the first Doctor of Civil Laws degree from McGill University's Graduate Law Faculty, Institute of Air and Space Law ('71).

<sup>1</sup> The Categorical Imperative formulated by Immanuel Kant is based on what he referred to in his Groundwork for the Metaphysics of Morals as including three different components or interpretations: 1) Universal Law Formulation – “Act only on that maxim through which you can at the same time will that it become universal law,” 2) Humanity or End in itself Formulation – “Act in such a way that you always treat humanity, whether in your own person or in the person of any other, never simply as a means, but always at the same time as an end,” and 3) Kingdom of Ends Formulation (combines the preceding two formulations) – “All maxims as proceeding from our own [hypothetical] making of law ought to harmonise with a possible kingdom of ends.” See, therefore, <http://hercules.gcsu.edu/~hedmonds/lecture%20notes/kant%20lecture%20notes.htm> also, Robert Johnson, *Kant's Moral Philosophy*, in STANFORD ENCYCLOPEDIA OF PHILOSOPHY, Apr. 6, 2008, <http://plato.stanford.edu/entries/kant-moral/>; and see generally, Immanuel Kant's “goodwill, duty, and the categorical imperative”, ETHICS AND SOCIAL CONCERN (NY; Paragon House Publishers, 1989).

Andrew G. Haley at the International Astronautical Congress of the International Astronautical Federation (IAF) held in Rome, Italy in September 1956. The concept was subsequently addressed in the October 1, 1956 issue of *Time* magazine, and a few months later in the same year, it was covered in the December 29, 1956 issue of *The New Yorker* magazine.<sup>2</sup>

Haley, somewhat arguably referred to by the legal profession as the “first space lawyer,”<sup>3</sup> asserted that “Metalaw” referred to fundamental legal precepts of theoretically universal application to all intelligences, human and extraterrestrial. Numerous attempts at relying on Hindu, Buddhist, Christian, Islamic, etc., principles that must dictate relations among humankind were not responsive to the dictates of Metalaw governing projected relations between and among humankind and “intelligent” extraterrestrials, i.e., the traditional Golden Rule was “starkly anthropocentric.”<sup>4</sup> It only reflects the subjective needs and wishes of humans. The dictates of the empirically understood . . . at least up to its present level . . . biochemical underpinnings of humankind behavior are ignored in the traditional, and even current in certain respects, understanding of the es-

---

<sup>2</sup> Andrew G. Haley coined the term “Metalaw,” referring to a field of jurisprudence currently addressing the scientific search for extraterrestrial intelligence (SETI). At the time of the presentation and subsequent publication of his Metalaw principle, in addition to his private law practice and serving as General Counsel of the American Rocket Society, Haley also served as Chairman of the International Affairs Committee of the International Astronautical Federation. See *TIME* (Oct. 1, 1956), available at <http://content.time.com/time/magazine/0,9263,7601561001,00.html>.

<sup>3</sup> Eduardovich Tsiolkovsky (b. 1857 –d.1935), a Polish born Russian math teacher who inflexibly believed that humanity had to become a space civilization in order to survive, is credited with having been the first to address interplanetary travel issues in the 19<sup>th</sup> Century. Although he was not considered a practicing space lawyer, his approach relied on mathematical disciplines, which, as will be noted at a later point in the instant discussion, may well have laid the foundation for interplanetary relations in the context of evolving definitions of Metalaw. For additional related specifics regarding his variety of contributions to the concept of humans living in space, see *Konstantin E. Tsiolkovsky*, INTERNATIONAL SPACE HALL OF FAME, <http://www.nmspacemuseum.org/halloffame/detail.php?id=27> (last visited Sep. 6, 2013). For a “Concise History of Space Law: 1910-2009,” by space law historian Dr. Stephen E. Doyle, in which the author addresses early contributions to various aspects of space law, such as Metalaw, see *NEW PERSPECTIVES ON SPACE LAW: THE PROCEEDINGS OF THE 53<sup>rd</sup> IISL COLLOQUIUM ON THE LAW OF OUTER SPACE YOUNG SCHOLAR SESSION*, 1-24 (Mark J. Sundahl & V. Gopalakrishnan, eds. 2011), available at <http://www.iislweb.org/docs/NewPerspectivesOnSpaceLaw.pdf>.

<sup>4</sup> See *TIME*, *supra* note 2.

sence of the Interstellar Golden Rule embodied in Haley's view of Metalaw, i.e., do unto others as they would have you do unto them. But, in addition to certain relevant views of R. A. Freitas that are embellished upon at a later point in this discussion, the instant author questions just

[w]ho, or what, determines that which is 'injurious or hurtful to some other being?' If mankind is to make such a determination, it is of necessity one which is anthropocentric in nature. If an alien being is to make the determination, is not man deprived of some rights as an integral party? Or perhaps there is a compromise based on an understanding of all participants of the ultimate laws of nature permitting or tending towards a balanced universal ecosystem? If there is truth in the latter approach, again we must turn to the principle involved in Haley's Interstellar Golden Rule—do not disrupt unilaterally the ecosystem of an alien sentient being.<sup>5</sup>

In this context, attorney A. C. Korbitz notes that

[i]t is clear the metalegal precepts [Andrew] Haley and [Ernst] Fasan proposed are squarely rooted in natural law theory and flow from Kant's Categorical Imperative in a largely deductive manner rather than being drawn empirically from actual human legal institutions in an inductive fashion. Despite this, Haley acknowledged the obvious anthropocentric limits of natural law theory but could not ultimately divorce Metalaw from this intellectual construct. This failure led former Smithsonian . . . counsel George Robinson to note that the cultural concept of rules or law is itself anthropocentric . . . Robinson urged space lawyers, when engaging in metalegal research, to adopt an empirical approach similar to that used by cultural anthropologists. Robinson proposed an empirical analysis of Metalaw by studying human values formed with respect to totally alien concepts and potential situations, in particular 'in all bio-ecological and cultural regimes wherein categories of relationships occur and may be distinguished.'<sup>6</sup>

---

<sup>5</sup> Quote taken from George Robinson, *Ecological Foundations of Haley's Metalaw*, 22 J. BRIT. INTERPLANETARY SOC. 266-274 (1969).

<sup>6</sup> See, therefore, Adam Chase Korbitz, *A Brief Introduction to Metalaw*, 9, <http://metalawandseti.blogspot.com/p/brief-introduction-to-metalaw.html> (last visited

As noted, above, Haley published his view of Metalaw in 1956 in an article entitled "Space Law and Metalaw – A Synoptic View."<sup>7</sup> In the article, again as referenced above, he proposed what is commonly known as his Interstellar Golden Rule, i.e., "do unto others as they would have you do unto them." In his review of the various papers delivered at the 1956 IAF Congress, A.E. Slater stated his view that Haley's "Space Law and Metalaw – A Synoptic View" was "deficient with respect to necessary definitions."<sup>8</sup> As noted in subsequent discussions, herein, the instant author agrees with much of Slater's assessment, particularly as it addresses deficiency of definitions in specific contexts. Nevertheless, Slater's assessment was totally rejected at the time by Haley.<sup>9</sup> "My reassessment of the Rome paper," asserted Haley,

satisfied me that I had adequately defined anthropocentric law as being simply the law of human beings, and in this connection the term 'law' is frequently employed as referring to a science of principles; and, specifically, a science or system of principles or rules of human conduct; 'a system of rules and principles, in which the rights of parties are protected and enforced; a system of rules conformable to the standards of justice and on an enlarged view of the relations of persons and things as they practically exist; a mass of principles classified, reduced to order, and put in the shape of rules, agreed on by ascertaining the common consent of mankind; rules of civil conduct for the common good; rules promulgated by government as a means to an ordered society; the enforcement of justice among

---

Sep. 6, 2013), and also Note 14, *infra*, for a recognition of Dr. Ernst Fasan's professional involvement with space law, in particular his role in the evolving constructs and definition of Metalaw.

<sup>7</sup> Andrew G. Haley, *Space Law and Metalaw: A Synoptic View*, HARVARD L. REC. 23 (Nov. 8, 1956).

<sup>8</sup> See, therefore, A. E. Slater, *Technical Sessions at the Rome Congress*, 16 J. OF THE BRITISH INTERPLANETARY SOC. 22, 41 (Jan.-Mar. 1957).

<sup>9</sup> Andrew G. Haley, *Space Law and Metalaw – Jurisdiction Defined*, 24 J. AIR L. & COM. 286 (1957) (for a rejection of Slater's view regarding definition deficiencies in Haley's 1956 IAF paper). For additional discussions of the Metalaw concept, and also of Slater's concern about lack of necessary definitions in Haley's presentation of the Metalaw concept, see also Andrew G. Haley, *Basic Concepts of Space Law*, in 26(11) JET PROPULSION (1956), and Andrew G. Haley, *Space Law – Basic Concepts*, 24 TENN. L. REV. 643 (June 1956).

men. It is said that the very definition of law is *sancto sancti jubens honesta et prohibens contrara*.<sup>10</sup>

The words underlined by the instant author are but a few examples that emphasize the critical lack of definitions in specific contexts, at that time, regarding operative words and phrases necessary to give an empirically substantive foundation to Haley's views. In fairness, of course, much has been uncovered since the early 1960s about the empirical data relating to the biochemistry/biophysics of the species *Homo sapiens sapiens*, or modern humans, and their societal/ecological interactive characteristics, as with all organic life forms, dictated by the human genome and specimen-specific genetic coding and genetic sequencing.<sup>11</sup>

It was in his 1956 paper, "Space Law and Metalaw – A Synoptic View," presented at the 7<sup>th</sup> Annual Congress of the International Astronautical Federation in Rome, Italy, that Haley proposed his "Interstellar Golden Rule." His view was that only one principle of human law can be resorted to in possible future relations with extraterrestrial life forms exhibiting "intelligence" that, apparently, only humans can define. The objective of the Interstellar Golden Rule was to impose or rely on "the stark concept of absolute equity" in human interactive relations with intelligent extraterrestrials.<sup>12</sup> The concept of Metalaw and

---

<sup>10</sup> *Space Law and Metalaw – Jurisdiction Defined*, *supra* note 9, at 286 (emphasis added). The Latin phrase *sancto sancti honesta et prohibens contrara* can be interpreted generally as "the law is a sacred sanction, commanding what is right and prohibiting the contrary." The underlined words and phrases included in the quote are indications of terms and terminology considered requiring their own interpretations in context in order to give meaningful understanding of what is intended by "anthropocentric law" as a component of Metalaw.

<sup>11</sup> For the present discussion, "genome" may be defined in modern molecular biology and genetics as "the entirety of an organism's hereditary information . . . encoded either in DNA [deoxyribonucleic acid] or, [even for many types of primitive non-cellular] viruses, in RNA [ribonucleic acid]. The genome includes both the genes and the non-coding sequences of the DNA/RNA." For a more descriptive, but still general, overview characterizing the genome and its function, see <http://en.wikipedia.org/wiki/Genome>.

<sup>12</sup> What characterizes "extraterrestrial" also is subject to open-ended discussion at this time given the re-emergence of the panspermia theory that the genesis of organic life occurred not necessarily on Earth or any specifically identifiable planet or component of the cosmos, but rather life forms are continuously exchanged between and among those entities, including Earth. The concept has not been proven, but remains open to scientific assessments based upon ongoing research into extraterrestrial life

the Interstellar Golden Rule was re-introduced by Haley in his seminal book of 1963, *Space Law and Government*.<sup>13</sup>

## II. DR. ERNST FASAN: UPDATING AND FINE-TUNING A DEFINITION OF “SENTIENT BEING”

Not until 1970 was there any significant refinement or embellishment of the Metalaw concept and the Interstellar Golden Rule. In that year, *Relations with Alien Intelligences: The Scientific Basis of Metalaw* was published by Dr. Ernst Fasan.<sup>14</sup> In this work expanding on Haley’s Metalaw concept of 1956 (and characterized in more detail in 1963), Dr. Fasan emphasized his view, along with those of Haley, that Metalaw was the entire sum of laws that regulate, or will regulate, the relationships between and among the different “races” in the universe. He emphasized that Metalaw is the “first and basic ‘law’ between races” that establishes the ground rules for interactive relationships if and when *Homo sapiens sapiens* encounters a representative of an extraterrestrial race; and that this basic body of law would be relied upon to regulate the conduct both of humans and intelligent extraterrestrials in order to avoid mutually harmful activities. Again, unfortunately, the word “intelligent”

---

forms and/or the essential components for life as we presently understand them. In this context, for a comprehensive history and list of publications regarding the origin of life and the panspermia theory, see <http://en.wikipedia.org/wiki/Panspermia#Hoaxes>. In most works relating to Metalaw and interaction between and among humankind and intelligent extraterrestrials, the operative word “intelligent” is never defined, either scientifically and/or in specific context. It simply is *assumed* to be defined as an anthropocentric characteristic.

<sup>13</sup> See, generally, ANDREW G. HALEY, *SPACE LAW AND GOVERNMENT* (New York: Appleton-Century-Crofts, 1963).

<sup>14</sup> ERNST FASAN, *RELATIONS WITH ALIEN INTELLIGENCES: THE SCIENTIFIC BASIS OF METALAW* (Berlin Verlag, Berlin, 1970) [hereinafter *RELATIONS WITH ALIEN INTELLIGENCES*]. Dr. Fasan is an Austrian attorney and internationally recognized as a leading authority on space law, and particularly Metalaw, which he has addressed in the context of his significant attention to the Search for Extraterrestrial Intelligence (SETI). Among other highly recognized involvements with space law and issues relating to Metalaw, Fasan remains an active member of the SETI Permanent Study Group of the International Academy of Astronautics, and leadership involvement with the International Institute of Space Law (IISL) of the International Astronautical Federation. In June 2008, as an honorary director of the IISL, Dr. Fasan assisted in representing the IISL before the United Nations in seeking and attaining Permanent Observer status of the IISL before the UN Committee on the Peaceful Uses of Outer Space (UNCOPUOS).

as it is referred to in Metalaw interpretations and applications is left undefined in specific contexts, and without consideration of the possibility, if not probability, that certainly some form of extraterrestrial life may manifest characteristics of “intelligence” and “race” different from those of modern humans, even those of sentient hominid precursors of modern humans. Also, use of the word “race” remains undefined in any specific context.<sup>15</sup>

In trying to clarify and expand upon Haley’s Metalaw concept, Fasan falls into the same trap as Haley, i.e., a failure to use explanatory words and phrases in carefully defined characteristics and in equally as carefully defined contexts. A seminal instance of this failure is the use of the word “scientific”<sup>16</sup> in describing his view of the basis of Metalaw. Further, Fasan asserts that Metalaw consists of all legal relationships between different races in the universe.<sup>17</sup> Without defining “races,” of which there are several on planet Earth alone, in context, Fasan characterizes Metalaw as the “first and basic ‘law’ between races” providing the “ground rules” for a relationship if and when we establish communication with or encounter another intelligent race in the universe” so as “to avoid mutually harm-

---

<sup>15</sup> “Race,” at present, usually refers to an actually or potentially interbreeding group within a species, including use of technology for biotic replication and/or metabolic activities; but excluding self-replication and metabolic activities solely by technological entities, regardless of whether “intelligent.” For a definition of “race”, see, WEBSTER’S NINTH NEW COLLEGIATE DICTIONARY 969 (1991). The word “intelligence” as applied to humans also has many different definitions and connotations, such as “having a high degree of...mental capacity [however that “mental capacity” may be defined in context]; revealing or reflecting good judgment or sound thought...,” but all needing to be defined in specific contexts to be meaningful in their interpretations and manifestations of Metalaw. For definitions of “intelligence”, see, *id.* at 626 (1991).

<sup>16</sup> The word “scientific” relates to the method, or exhibits the methods or principles, of science, i.e., quite simply “knowledge as distinguished from ignorance or misunderstanding.” Generally, science is understood, correctly or not, as referring to the study of nature or “natural objects. *Id.* at 1051. Normally, the word “scientific” refers to a methodology used in studying and/or “determining a body of facts . . . systematically arranged and showing the operation of general laws,” such as in mathematics; “a systematic knowledge of the physical or material world gained through observation and experimentation[;] any of the branches of natural or physical sciences. “Science,” DICTIONARY.COM, <http://dictionary.reference.com/browse/science> (last visited Sep. 6, 2013).

<sup>17</sup> RELATIONS WITH ALIEN INTELLIGENCES, *supra* note 14.

ful activities.”<sup>18</sup> At immediate issue is what constitutes a “race?” What constitutes “intelligent?” Must it be *mutually* harmful, or can it be *unilaterally* harmful?

In “A Brief Introduction to Metalaw,”<sup>19</sup> A. C. Korbitz notes that Dr. Fasan sets out the following five essential characteristics of what constitutes “sentient”<sup>20</sup> beings:<sup>21</sup>

1. Life, in the sense of influencing the environment.
2. Intelligence involving self-realization, free will [presently considered by certain theoretical and subatomic physicists to be property seemingly possessed by electrons], and “realization of the basic ideas of good and evil.”
3. Detectability by humans.
4. Three-dimensionality, or existence or activity with three-dimensional space.
5. At least a rudimentary will to live.

#### A. *Incorporating Sentient Beings Into the Principles of Metalaw*

It was on these characteristics of what constitutes, in his view, a “sentient” being, that Dr. Fasan ranked in descending order what he believed were the principles embraced in, and reflected by, Metalaw, i.e.,

---

<sup>18</sup> See, therefore, Korbitz, *supra* note 6. See, also, by George Robinson, *Metalaw – Prolegomena to the Quantification of Jus Naturale*, 40 GEO. WASH. L.REV. 709 (1972).

<sup>19</sup> Korbitz, *supra* note 6.

<sup>20</sup> WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY, *supra* note 15, at 1073 (for a rather ephemeral definition of “sentient”, i.e., “[r]esponsive to or conscious of sense impressions.” This definition, which perhaps might apply as easily to the common field mouse, and also defined as a feeling or sensation as distinguished from perception and thought, seem together to be laying the foundation for the next step in biochemical evolution, which is abstract perception and reasoning. Recent studies have indicated that those characteristics are not necessarily limited to *Homo sapiens sapiens*, or modern humans, and even, perhaps, are shared independently by certain simians, cetaceans, etc., and post humans.

<sup>21</sup> See, RELATIONS WITH ALIEN INTELLIGENCES, *supra* note 14 (for Fasan's reference to what he believes constitutes an extraterrestrial “being.”).

1. No partner of Metalaw may demand an impossibility.
2. No rule of Metalaw must be complied with when compliance would result in the practical suicide of the obligated race.
3. All intelligent races of the universe have in principle equal rights and values.
4. Every partner of Metalaw has the right of self-determination.
5. Any act which causes harm to another race must be avoided.
6. Every race is entitled to its own living space.
7. Every race has the right to defend itself against any harmful act performed by another race.
8. The principle of preserving one race has priority over the development of another race.
9. In case of damage, the damager must restore the integrity of the damaged party.
10. Metalegal agreements and treaties must be kept.
11. To help the other race by one's own activities is not a legal but a basic ethical principle.<sup>22</sup>

These principles ultimately were condensed by Fasan into a general characterization, rather than a workable formula of three, i.e.,

1. A prohibition on damaging another race.
2. The right of a race to self-defense.
3. The right to adequate living space.<sup>23</sup>

At the end of his discussion in *Relations with Alien Intelligences*, Fasan addresses Kant's assertion that "moral principles are not based upon that which is typical of human nature, but must exist *a priori* of themselves."<sup>24</sup> In response, Fasan asserts in a rather ephemeral and functionally amorphous fashion that "[w]hen ... we discuss legal rules, valid for every intelligent race and its members, we must start with those principles which are

---

<sup>22</sup> Korbitz, *supra* note 6.

<sup>23</sup> Korbitz, *supra* note 6.

<sup>24</sup> See, RELATIONS WITH ALIEN INTELLIGENCES, *supra* note 14, at 31.

deducible by and from pure reason.”<sup>25</sup> As noted by Korbitz, however,

“[i]t is clear the metalegal precepts Haley and Fasan proposed are squarely rooted in natural law theory and flow from Kant’s Categorical Imperative in a largely deductive manner rather than being drawn empirically from actual human legal institutions in an inductive fashion. Despite this, Haley acknowledged the obvious anthropocentric limits of natural law theory but could not ultimately divorce Metalaw from this intellectual construct.”<sup>26</sup>

Korbitz then continued by observing that this failure of Fasan’s led the instant author to note “that the cultural concept of rules of law is itself anthropocentric.”<sup>27</sup> Further, he noted that the instant author

“...urged space lawyers, when engaging in metalegal research, to adopt an empirical approach similar to that used by cultural anthropologists . . . [and] proposed an empirical analysis of Metalaw by studying human values formed with respect to totally alien concepts and potential situations, in particular ‘in all bio-ecological and cultural regimes wherein categories of relationships occur and may be distinguished.’”<sup>28</sup>

Note, however, that the Metalegal precepts Haley and Fasan proposed are not necessarily rooted in Natural Law Theory, and the ensuing discussion will focus on this reservation; particularly in light of the unfolding empirically based understanding of the biochemistry subtending all humankind behavioral manifestations and “cultural” activities. As with all natural disciplines and subdisciplines, human jurisprudential theories and consequent implementing positive laws are understood from a quantifiable empirical perspective using a secular meth-

---

<sup>25</sup> *Id.* at 52.

<sup>26</sup> Korbitz, *supra* note 6, at 4.

<sup>27</sup> See generally, by George S. Robinson, *Ecological Foundations of Haley’s Metalaw*, 22 J. OF BRIT. INTERPLANETARY SOC. 266-274 (1969). For an interesting and forward thinking analysis of Metalaw and the contributions of Haley and Fasan, see also, Rita M. Lauria, *Metalaw*, 1(1) INT’L L.J., <http://lacba.org/FilesMain%20Folder/Sectgions/International%20Law//International/file/InternationalLawNewsletter/files/Metalaw.pdf>.

<sup>28</sup> As quoted in Korbitz, *supra* note 6, at 4.

odology. This does not disfranchise the humanist/religious approach and its importance in the absence of quantifiable explanatory and predictable empirical data derived from experience and ever-increasing/evolving research data.

### III. DOES METALAW REST UPON NATURAL LAW THEORY?

A secular grasp of Natural Law Theory, or *jus naturale*, shifts and metamorphoses also as reliable empirical data becomes available. A basic and useable definition of the theory may be considered a philosophic construct, understood initially to have derived from Aristotle and expanded upon by numerous other “philosophers” such as Thomas Aquinas. The construct essentially is based on what are considered universal traits applicable to all existence and shared by all humankind and, perhaps, all life forms, and upon which human laws are premised and referred to as “positive laws” in the form of, say, legislation and implementing regulations. The theory has evolved since the dawn of written philosophy, and has been distorted in concept to include functionally shifting precepts of “morality” and human “rights,” all of which are, in effect, manifestations of positive laws, whether religious or secular, but which in fact are shifting expressions of biological dictates.

In the traditional jurisprudential realm of *jus naturale*, the theory was considered to have found its genesis in Greek philosophy, and then used essentially in the philosophic considerations of Roman jurists in the Antonine Age. At that time, and still embraced now by certain natural law theorists, the concept denoted

“ . . . a system of rules and principles for the guidance of human conduct which, independently of enacted law, or of the systems peculiar to any other people, might be discovered by the rational intelligence of man, and would be found to grow out of and conform to his nature, meaning by that word his whole mental, moral, and physical constitution.”<sup>29</sup>

---

<sup>29</sup> See, Black’s Law Dictionary 1177 (4<sup>th</sup> ed. 1951) (for a relatively current definition of *jus naturale* and its evolving history, “Natural Law”). While the Natural Law Theory

Interestingly, history shows that the conception of what is termed the Stoic Doctrine relating to Natural Law Theory led to a departure from the philosophy of the Antonine Age and focused on life being ordered “according to nature,” which in its turn

“rested upon the purely supposititious existence, in primitive times, of a ‘state of nature’ . . . a condition of society in which men universally were governed solely by a rational and consistent obedience to the needs, impulses, and promptings of their true nature, such nature being as yet undefaced by dishonesty, falsehood, or indulgence of the baser passions.”<sup>30</sup>

While this characterization of the evolution of *jus naturale* has been manipulated and evolved over the centuries as human behavior became increasingly understandable from an empirical perspective, it was still cloaked in religious and often very imprecise terms. Nevertheless, non-empirically based and manipulative terminology continues to be used to paint human behavior in a social context as non-empirical by using such imprecise terms as “moral,” “ethical,” and the like, to describe acceptable, but transitory, social behavior that, in fact, is based solely on genome competitiveness and other forms of species and individual survival-oriented competitiveness. In other words, use of these words and concepts constitute an ongoing attempt to disregard the evolutionary history of all hominids, protohominids, and even carbon-based single cell and viral life forms, the shoulders upon which and whom modern humans and the ongoing evolutionary potential of *Homo sapiens sapiens* stand. In this context, it is important to keep in mind that “intelligence” and sentient or abstract perception and reasoning characteristics of modern humans are and have been shared by many of those entities on the bush of evolution before they became extinct or were pushed to a lower order in the philosophic musings of early Greeks and Romans. In fact, certain genetic character-

---

found its genesis in Greek philosophy and subsequently the Antonine Age jurisprudentially oriented philosophers, works of more current traditional “students” of the theory of *jus naturale* include those of St. Thomas Aquinas, Thomas Hobbes, and John Locke.

<sup>30</sup> *Id.*

istics of a sentient, but extinct, hominid species/subspecies still survive in *Homo sapiens sapiens*...such as Neanderthalensis.<sup>31</sup> All of which brings this discussion of the tenets of Metalaw to the changes that empirically based secularism is imposing on that theory.

A. *Metalaw: A Shift to Empirical Pragmatism?*

As noted by A.C. Korbitz, “[w]hile the term *Metalaw* and the concept it represents are both today rather obscure, the term did enter the popular parlance of the day rather quickly in the 1950s, only to fade gradually into the fog of history,” until now.<sup>32</sup> Perhaps in the realm of faith and evolution of religions filling the seemingly endless gaps in empirical, quantifiable, and predictable aspects of existence, the evolution of humankind to the present has still allowed *Homo sapiens sapiens* to raise itself much too far above its biological origins in trying to establish a variety of jurisprudential concepts and implementing positive laws for relatively peaceful global existence without considering that the species is still in the process of evolution of its sentient, abstract/perception reasoning . . . and its very “essence.”

In the context of the preceding discussions, “xenobiology” is defined as the study of extraterrestrials, especially their biological compositions and behavioral manifestations. More broadly, it can be said to be the study of all aspects of life, intelligence, and civilization indigenous to environments other than Earth.

---

<sup>31</sup> A Neanderthal genome project was started in 2006 by the Max Planck Institute for Evolutionary Anthropology in Germany. The Institute coordinated a study consisting of a collaboration of scientists studying the bases that make up the complete genome of the closest human relative, i.e., *Homo neanderthalensis*. In the study released May 7, 2010, the team of collaborating scientists issued a paper addressing the initial results of its Neanderthal genome study, based on several Neanderthal fossils from Croatia, Germany, Spain, and Russia. These results indicated that Neanderthals were more closely related to modern humans outside of Africa. The results of the study also identified several genomic regions that appear to have played a significant role during human evolution. A small percentage of Neanderthal genes appear in the genetic make-up of certain modern humans. See, therefore, by R.E. Green, et al., *A Draft Sequence and Preliminary Analysis of the Neanderthal Genome*, 328(5979) SCIENCE 710-722 (May 7, 2010), <http://www.sciencemag.org/contents/328/5979/710.full>.

<sup>32</sup> Korbitz, *supra* note 6, at 3.

More parochially, in medicine and medically-oriented research laboratories, xenology is considered the study of parasites, on Earth and, perhaps, elsewhere.<sup>33</sup> In a context more relevant to Metalaw principles addressing relations of humankind in interactions with Earth-alien extraterrestrials, xenology is focused on the biological traits and relationships of all life forms, their levels of “intelligence,” however that term is defined under specific circumstances, and the empirically quantifiable, ecologically interactive characteristics of the cultures, societies, and civilizations they represent, *but indigenous to environments other than Earth*. Nevertheless, as addressed in subsequent discussions, extraterrestrial environments do not necessarily preclude those of humankind and their biotechnologically integrated descendants, i.e., transhumans and post humans. In this context, Robert A. Freitas, Jr., hints even more closely at an appropriately inclusive definition of xenology, i.e.,

the study of alien life forms is a major subdiscipline within the xenological sciences. Its subject matter is the set of all possible life systems in the universe, rather than just the biology of a single world. The common assertion that xenology is ‘a science in search of a subject’ because no extraterrestrials have yet been found ignores the long evolutionary history of our planet. From the cosmic point of view, Earth is an alien world as exotic as any in the Galaxy.”<sup>34</sup>

Even more relevant to the instant and following discussions is that alien intelligences in the form of transhumans transitioning into post humans is, perhaps, much closer than most

---

<sup>33</sup> See, “xenology” as defined in MOSBY’S MEDICAL DICTIONARY (8th ed., 2009), <http://medical-dictionary.thefreedictionary.com/xenology>.

<sup>34</sup> See, Robert A. Freitas, Jr., *Xenology*, 101 ANALOG SCIENCE FICTION/SCIENCE FACT, 30-41 (Mar. 1981), <http://www.xenology.info/Papers/Xenobiology.htm>. Much has evolved and been discovered in the fields of exobiology and Earth indigent medical and biologically-related research on Earth since Freitas published this article, but the basic premise remains valid. Interestingly, even in 1981, Freitas was compelled to note that “chauvinism” is a word that has “come to be associated with any absurd, unreasoning, single-minded devotion to one’s own race, nationality, sex, religious persuasion, or, more generally, to one’s own peculiar point of view. Chauvinisms usually are associated with ignorance [not stupidity, which can be defined as recidivistic ignorance] – in view of our lack of hard knowledge about lifeforms elsewhere in the universe, chauvinisms are predictably common in xenology.” *Id.* at 30.

researchers and the general public are willing to accept.<sup>35</sup> Nevertheless, one of the principle obstacles to overcome by the legal, biological research, engineering, medical, and theological professions is the failure to define operative words consistently and in varying contexts. This can be seen in the a sample of the historical landmarks representing evolution of Metalaw theory from its modern inception by Andrew Haley until shortly after Dr. Fasan's assessment and treatment of the term and subtending principles.

### B. *Metalaw Resting on Ancient as well as Modern Laurels*

Robert Freitas suggests some of the signal moments in history that represent evolution of the basic principles reflected in what became known as Metalaw. These include those set forth below, among many others, up to Dr. Ernst Fasan's approach to what constitutes those evolved characteristics.<sup>36</sup> Many principles focused on pragmatic as well as anticipatory philosophic perspectives and undefined, amorphous terminology. Several, but not all, predate in antiquity the principles of Metalaw espoused by Haley and Fasan: e.g.,<sup>37</sup>

1. "What is hurtful to yourself, do not unto your neighbor" – Judaic Talmud.
2. "As you wish men to do to you, so also do you to them" – Bible, Luke 6.3.1
3. "We should behave to friends as we would wish friends to behave to us" – Aristotle.
4. "What I do not wish others to do unto me, that also I wish not to do unto them" – Confucius.

---

<sup>35</sup> See *infra* Subheading IV: QUANTIFICATION OF METALAW OBJECTIVES, for additional discussion of Metalaw and its potential relevance and applicability to trans-humans and post humans.

<sup>36</sup> For a complete listing by Robert A. Freitas, Jr., of his personally selected historical signposts regarding evolution of the principles of Metalaw, see ROBERT A. FREITAS, XENOLOGY: AN INTRODUCTION TO THE SCIENTIFIC STUDY OF EXTRATERRESTRIAL LIFE, INTELLIGENCE, AND CIVILIZATION (1st Ed., Xenology Research Institute, Sacramento, Calif., 1979), <http://www.xenology.info/Xeno/25.1.2>.

<sup>37</sup> *Id.* The quotes presented herein are taken from Robert A. Freitas, Jr., *Exenology: An Introduction to the Scientific Study of Extraterrestrial Life, Intelligence, and Civilization*, *id.* Quotes and dates ascribed are not taken from original sources, but fairly reflect the views of those quoted.

5. "Do good unto others as God has done unto thee" – Mohammed.
6. "People have the right to travel to any lands they desire subject to the restriction that they must not do harm to the natives residing therein" – A quote in 1532 by Francisco de Vitoria, a Spanish theologian perhaps best remembered for his defense of the rights of the native Americans and others of the New World against the colonists, and for his views regarding the limitations of otherwise justifiable warfare.
7. The 1788 Categorical Imperative formulated by Immanuel Kant demanding that humans "[a]ct only on such a maxim as you can will that it should become a principle of universal legislation," but a viable observation only if it will enhance survivability of the interacting culture, society, or civilization and the predominant genome and/or genetic coding; or when viewing the taxonomic lower orders of the animal/plant Kingdoms, and what will ensure genome/genetic coding/genetic sequencing survivability and adaptive evolution of that representative genome, etc.
8. ". . . link conduct with probability, and give mathematical proof that certain patterns of conduct increase the probability of certain kinds of coincidences" – A 1945 "ethical equation" introduced by Murray Leinster that drifted into the use of empirically related assessments of human behavior, and that would lead to the conclusion that, eventually, "an exact balance of punishment or reward would occur" depending upon whether interactions between one person and an alien either were "good" or "wrong;" unfortunately, a drift back to an amorphous sense of what constitutes moral/amoral and ethical/unethical behavior.
9. "There could be no truce between men and a superior form of life" – A 1949 quote by Murray Leinster that seems to revert from non-pragmatic definitions of morality and ethical behavior to the realities of the biological/biochemical foundations of *Homo sapiens sapiens* survival and that of its evolving descendants...both on Earth as well as in space.
10. The 1956 assertion by Andrew C. Haley, in furtherance of his Interstellar Golden Rule, that "[t]here may be no visitation whatsoever of any inhabited area until intelligible

contact will have been made and the Authority is satisfied that no physical or psychological hazard exists to either the explorer or the explored.”

11. A 1958 reaffirmation by Haley of the basic Metalaw construct, i.e., “[i]t is better to destroy Mankind than to violate Metalaw,” a view that appears to retreat from any recognition of the biological foundations of *Homo sapiens sapiens* . . . and, indeed, all Earth indigent life forms giving evolutionary rise to modern humans.
12. “If the planets are inhabited, sovereignty may be established only in two ways: By a victorious war or by agreement. War is and will always be the first origin and the *ultima ratio*. Sovereignty means power and ultimately military amid technical power. Whatever may be the means and ways. Agreement would be the acceptance by inhabitants of the rule of the conquerors. The hypothesis of mutual sovereignty is practically excluded as the superior group would necessarily dominate...If the planets are not inhabited, the law would be accomplished by virtue of occupation. The planets would then be *res nullius* and the venerable custom and general principle of the law, according to which the effective possession and continuous occupation establishes sovereignty, would govern.” This 1960 quote by Julian G. Verplaetse reflects, indeed embraces, a drift to biological realism embodied in the fright, flight, or fight expressions of the autonomic nervous system, which injects a certain aspect of biological reality in the variety of views embracing the underlying wishful sanctities at the core of Metalaw.
13. “Any idea of aggression or conquest should be discarded—the mission of man when visiting other planets should evidence a high degree of civilization and a sense of legality” –Aldo Armando Cocca, 1962.
14. “We may find inferior beings, and these we may keep from harming us by purely protective means” – Andrew G. Haley, 1963.
15. “The exploration and use of Outer Space, including the Moon and other celestial bodies,<sup>38</sup> shall be carried out for

---

<sup>38</sup> See, Treaty on Principles Governing the Activities of States in the Exploration and use of Outer Space, Including the Moon and Other Celestial Bodies, *opened for signature* Jan. 27, 1967, 610 U.N.T.S. 205, 18 UST 2410.

the benefit and in the interests of all countries, and shall be the province of all Mankind. There shall be freedom of scientific research and exploration in outer space, including the Moon and other celestial bodies” – Article I of the 1967 Outer Space Treaty gives no recognition of any legal status of potential interactions between and among Earthkind and extraterrestrial life . . . including biotechnologically-integrated and Earth indigent advanced forms of artificial intelligence *in extremis*. Ensuing Articles IV and VIII reference jurisdictional controls, but only with respect to human activities controlled by Earth-sovereign nations that are Treaty signatories. This discrepancy may be addressed during the current assessments of the Treaty presently being undertaken, and any need for amendments consistent with current technology, public and private funding, and prevailing international relations.

16. Haley’s Interstellar Golden Rule” – 1969 observation by G. Robinson relying on the bioecological foundations of all humankind behavior.
17. “Our basic interest will be to protect ourselves from any possible threat to Earth’s security. Our second concern would be to assist in developing or to participate in a stable system of interstellar politics that provides an acceptable level of security for all. Our third concern would be to learn from the aliens in order to advance our knowledge of the universe and to add to the tools of civilization” – 1973 observation by M. Michaud that illustrates a certain ambivalence about the sanctity of the Interstellar Golden Rule and its place in the body of Metalaw principles.
18. “Advanced civilizations might be reluctant to disseminate information that may be dangerous to less-developed societies, or which might, in the hands of those societies, become dangerous to themselves.” -1975 statement by B. Campbell that focuses on humankind interactions with extraterrestrials representing alien life forms less evolved than *Homo sapiens sapiens* and its descendants, biological and/or biotechnological in the form of transhumans and post humans. This statement, like most of those embodied in preceding quotes, above, are replete with undefined terms in vague contexts, and generally are more obfuscating than precise and helpful in terms of the specific

functional values intended to be adopted pursuant to the Interstellar Golden Rule.

19. “We should leave other cultures entirely alone—let them evolve naturally, with no help or interference by outsiders” – 1997 *principle of non-interference* somewhat surprisingly put forth by R.A. Freitas, Jr. Freitas has been one of the more outspoken supporters of recognizing the basic biological underpinnings of all human behavior; indeed, the biological underpinnings and dictates of all Earth indigent forms of carbon based life.

While these are only a few examples of the transitioning and evolution of the Metalaw concept and its component operating principles to the present, they are fairly representative of the dysfunctional vagaries that derive from lack of definition in specific contexts of critical wording and phrases. It reflects a lack of commitment to, and often recognition of, the empirically-dictated biochemical underpinnings of all life forms. Jurisprudents, and certainly most practitioners of positive laws, seem to confuse and intermix these biological dictates with some ephemeral and sentient perception/definition of seemingly relevant and applicable terms such as “moral,” “ethical,” and the like. The necessary transitioning to a secular approach to Metalaw, indeed all forms of jurisprudence and implementing positive laws, will be seen in the discussions, below.

#### IV. QUANTIFICATION OF METALAW OBJECTIVES

As indicated previously, Robert A. Freitas, Jr., is an attorney and researcher at the Xenology Institute in California, and has published rather extensively over the years on the subject of xenology consistent with its purest definition.<sup>39</sup> In the context of rules or principles the guardians of Metalaw have formulated for interactions with and among humankind and traditional concepts of the basic characteristics defining extraterrestrials, Freitas makes a few observations that are helpful as a segue to the potentially interactive characteristics between and among

---

<sup>39</sup> MOSBY'S MEDICAL DICTIONARY, *supra* note 33 (for the definition of “xenology” used in the instant discussion).

*Homo sapiens sapiens*, *Homo sapiens alterios*, and perhaps eventually *Homo alterios spatialis*, i.e., post humans. He urges his audience to keep in mind that the search for life just in our solar system is, comparatively speaking, only beginning. Some of his relevant observations include:

. [T]here used to be the notion that oxygen . . . is absolutely required for higher life. Many xenobiologists today categorically reject this proposition. Oxygen was largely absent during the first few billion years of evolution on Earth, and many organisms today still do not need this element to survive.<sup>40</sup>

. Another early biological chauvinism was the insistence that life is an especially fragile phenomena [sic] limited to a very narrow range of environments. During the 1960s scientists examined the extremes of terrestrial life and found that the flora and fauna of Earth (especially microorganisms and other simple lifeforms) resist death even when subjected to conditions that would quickly kill a human being.<sup>41</sup>

. When a TV camera was retrieved from the American lunar probe Surveyor 3 by Apollo astronauts, a colony of . . . bacteria was found growing inside the lens. These hardy microbes evidently survived three years of hard vacuum, no food or water, exposure to cosmic rays, and temperatures ranging from well above the boiling point of water in the daytime to – 160 C° during the night.

. All living creatures we know about are made up of complex carbon compounds immersed in liquid water. It may be that all life in the universe must take this form. . . . Over the years one of the most persistent and seemingly most reasonable biological chauvanisms has been the contention that water is the only good biochemical solvent But [sic]this view is slowly changing . . . Today, xenobiologists regard ammonia . . . as the lead in alternative to water for hypothetical alien life chemistries.<sup>42</sup>

---

<sup>40</sup> Robert A. Frietas, Jr., *Xenobiology*, 101 ANALOG SCIENCE FICTION/SCIENCE FACT, 30-41 (Mar. 30, 1981), <http://www.xenology.info/Papers/Xenobiology.htm>.

<sup>41</sup> *Id.*

<sup>42</sup> For a relatively early, but in large part abiding, technical treatment of this proposition, see Peter Molton, *Non-Aqueous Biosystems. The case for Liquid Ammonia as a Solvent*, 27 J. BRIT. INTERPLANETARY SOC. 243-262 (Apr. 1974).

Ammonia is known to exist in the atmospheres of all gas giants in the Solar System and is thought to have been plentiful on Earth during the first billion years of the planet's existence. . . . Numerous other biological solvent systems have been proposed from time to time, as for instance sulfur dioxide, hydrogen fluoride, methane, hydrazine, chlorine and sulfur.<sup>43</sup>

The ongoing disputes between and among the biologists, exobiologists, chemists, physicists, and representatives of other relevant disciplines continue, particularly as new discoveries are made incrementally with the expanding varieties of experiments and discoveries made both terrestrially and in space. But what is frequently missing in the search for extraterrestrial life is a consistent definition of what constitutes "intelligence." What and how is "sentient" defined universally, other than with respect to Earth biota, and even the limiting constraints of what has been considered a parochial hominid trait are beginning to expand into a more inclusive representation of Earth indigent life forms beyond the hominids and protohominids; e.g., the cetaceans.<sup>44</sup>

Finally, in the context of the biochemical foundations of organic life as we know it, certainly on Earth, Frietas notes that "[l]ife requires metabolism, a systematic manipulation [by the application of force] of matter-energy and information."<sup>45</sup> What is even more determinative of organic life are the biological necessities of survival through metabolic activities and self-replicative capabilities. In this context, Freitas also notes that "the advancing intelligence and versatility of electronic computers suggests that some sort of solid state 'machine life' may be plausible. Such entities would survive by manipulating electron flows and fields in order to process matter-energy and patterns of information."<sup>46</sup> [Note that even on the smallest theoretical form of energy on the Plank scale, all energy takes the form

---

<sup>43</sup> *Frietas, Xenobiology, supra* note 34.

<sup>44</sup> For a relevant, interesting, and informative discussion of the current research findings relating to the "brain power" and intelligence, or comparative cognitive characteristics, of cetaceans (e.g., whales, dolphins, etc.), see "Cetacean Intelligence" at [http://en.wikipedia.org/wiki/Cetacean\\_intelligence](http://en.wikipedia.org/wiki/Cetacean_intelligence) (last visited Sept. 6, 2013).

<sup>45</sup> *Frietas, Xenobiology, supra* note 34.

<sup>46</sup> *Id.*

of relatively organized information.]<sup>47</sup> Freitas concludes by observing “it is very likely that ours is just one possible life chemistry of many, and that all biochemical life is only one of many modes of xenobiological existence. But regardless of what shape they take, all lifeforms are worthy of our curiosity and respect as manifestations of the same fundamental unity and cosmic order that gave rise to life on Earth eons ago.”<sup>48</sup>

In a current context of the understanding and status of Metalaw principles by legal philosophers and practitioners, Metalaw is beginning to be viewed as somewhat “out of touch” with reality. For example, S.W. Greenwood, according to Freitas, has questioned its substantive validity in the context of the carbon based biochemical nature and dictates of human existence and social behavior, as well as for that speculated for extraterrestrial life forms and behavior. According to Freitas, Greenwood believes that

[t]he Great Rule of Metalaw proposed by Andrew Haley appears to have aroused surprisingly little critical comment. It seems to me to be a highly dangerous approach to the problem of how to behave in the presence of an alien intelligence. Literally it appears to direct an Earthman to do whatever an alien desires. What should be done when an alien desires an Earthman to hand over his vehicle, his equipment, and his crew? It is evident that the Rule of Metalaw would often be unworkable.<sup>49</sup>

Again, in a more contemporary understanding of the substantive jurisprudential underpinnings of the Metalaw concept, Dr. Rita M. Lauria, author and practitioner of space law and Metalaw, defines Metalaw as

an emerging juridical science that seeks to discover the basic tenets that can serve as guides to interaction with any intelligent life form in the universe. Because technology advances

---

<sup>47</sup> For an explanation of Planck units in the context of physics, see Planck Units at [http://en.wikipedia.org/wiki/Planck\\_units](http://en.wikipedia.org/wiki/Planck_units) (last visited Sept. 6, 2013).

<sup>48</sup> Freitas, Xenobiology, *supra* note 34, at 10.

<sup>49</sup> Freitas, XENOBIOLOGY, *supra* note 34 (citing S.W. Greenwood, *Correspondence*, 1 SPACELIGHT 261 (Apr. 1958)).

faster than jurisprudence can generally respond, it is reasonable for the global community to prepare fully for the consequences of scientific disciplines, like the space sciences and space exploration, as these may well alter our traditional legal definitions. We need to be prepared in anticipation of such consequences. Are there universal tenets that apply across all life forms in the universe? If so, what are these tenets that can serve to guide the interactions of different forms of sapientcy [sic] such that if we make contact with these we shall properly know how to conduct relations?<sup>50</sup>

This definition of Metalaw fits into current realities of applicable space technologies, and focuses the instant discussion on the subject of transhuman and post human traits that may help in identifying and characterizing what constitutes “intelligent”<sup>51</sup> in the context of applying the principles of Metalaw.<sup>52</sup>

#### A. *Religious Foundations of Metalaw?*

A passing observation, but quite obviously a very important component of understanding the secular approach to Metalaw, is the influence of religions, the humanistic view, on the *cosmic* perspective of Metalaw. Interestingly, in the context of current

---

<sup>50</sup> Lauria, *Metalaw*, supra 27. See generally, Rita M. Lauria & George Robinson, *From Cyberspace to Outer Space: Legal Regimes under Pressure from Emerging Meta-Technologies*, 33 U. LA VERNE L. REV. 219 (May 2012) [hereinafter *From Cyberspace to Outer Space*]; and by George Robinson & Rita M. Lauria, *Legal Rights and Accountability of Cyberpresence: A Void in Space Law/Astrolaw Jurisprudence*, XXVIII ANNALS OF AIR & SPACE L., 311-326 (2003) [hereinafter *Legal Rights and Accountability of Cyberpresence*].

<sup>51</sup> A general, but scientifically antiquated, definition of “intelligence” is “the ability to learn or understand from experience; ability to acquire and retain knowledge . . . the ability to respond quickly and successfully to a new situation; use of the faculty of reason in solving problems...” See, WEBSTER’S NEW WORLD DICTIONARY OF AMERICAN ENGLISH 702 (3rd College Edition, 1988). Scientific definitions of “intelligence” are almost as varied as those used by the lay public, and frequently rely on the use of words that also are ill-defined or totally inappropriate in the scientific context used.

<sup>52</sup> Perhaps it should be noted specifically at this point that the term “meta” is Greek in origin, and is interpreted as “a change in position or form, alteration, [and] transposition;” or, in a possible analogy to “metaphysics.” Metalaw might be defined as “going beyond or higher, transcending” and is used to “form terms designating an area of study whose [sic] purpose is to examine the nature, assumptions, structure, etc., of a (specified) field.” See, the definition of “meta,” in WEBSTER’S NEW WORLD DICTIONARY OF AMERICAN ENGLISH, supra note 51, at 851.

influences of religious concepts on international relations and indeed the interpretation and application of Metalaw, the classic Islamic system of jurisprudence known as the *maqasid al shari'ah* is brought to bear. Currently, to some, this involves seeking a new Golden Rule, as articulated in what are considered by Muslims as “summaries of eight irreducible principles of human responsibilities and human rights . . . All the revealed religions contain a universal paradigm of thought . . . [and] Muslims call this Islam.”<sup>53</sup> Dr. Robert D. Crane asserts that Islam “is based on an affirmation that there is an ultimate reality of which man and the entire universe are merely an expression, that therefore every person is created with an innate awareness of absolute truth and love, and that persona in community can and should develop from the various sources of divine revelation, including natural law or the *Sunnat Allah*, a framework of moral law to secure peace.”<sup>54</sup>

The above observations are noted here to indicate that in many respects the confusion in understanding the basic precepts and objectives of Metalaw, particularly when interpreting them in the context of Natural Law disciplines, which, in turn, refer such an “accurate” understanding to elusive words and phrases used without careful definition in specific contexts: For example, “moral law,” “absolute truth,” “love,” “ethical,” “peace,” “divine revelation” (a very individualistic phenomenon even if it could be defined in an empirical/quantifiable or measurable fashion), etc. All religions rely on these types of words and phrases for definition and characterization of their basic tenets. But they are not helpful in defining and ascertaining in an empirical and workable fashion the biochemical founda-

---

<sup>53</sup> Robert D. Crane, *The Global Vision of Metalaw*, 1 (Scholar's Chair at Menefee Mountain, Washington, Va., Sept. 11, 2011), [http://www.kaskas.com/uploads/Metalaw-Global\\_Vision.pdf](http://www.kaskas.com/uploads/Metalaw-Global_Vision.pdf).

<sup>54</sup> See, Robert D. Crane, *The Global Vision of Metalaw* (Scholar's Chair at Menefee Mountain, Washington, Va., Sept. 11, 2011) (an unpublished concept paper). See also generally, Robert D. Crane, former advisor to President Richard Nixon, and former Deputy Director of the United States National Security Council, Lecture Delivered in Celebration of his 80<sup>th</sup> Birthday before the International Institute of Islamic Thought (Mar. 27, 2009), *MaqasidAl-Shari'ah: A Strategy to Rehabilitate Religion in America*, <http://www.iiit.org/NewsEvents/News/tabid/62/articleType/ArticleView/articleId/133/Default.aspx>.

tions/dictates of all human and other life-form characteristics reflected as various relative levels of energy in the form of organized information. This, again, is a topic for another discussion and approach to defining a Natural Law Theory resulting in a jurisprudence(s) embracing specific flexible values underlying universally acceptable definitions of civil and criminal behavior . . . between and among cultures, societies, and civilizations and cross-civilization religious tenets; perhaps even “cosmically” if *jus naturale* is to fit into a universal definition of Metalaw.

*B. Cyberspace, Cyberpersona, and Cybernation: Catalytic Phenomena Embraced by the Metalaw Operating Construct*

Dr. Rita M. Lauria, a noted early pioneer in the relationship of Metalaw and communications, particularly in the arena of space jurisprudence, telepresence, and virtual reality (which she prefers to call “virtuality”), addressed the role of virtuality in the context of “inside information.” She adopts the definition of “virtuality” as “essence . . . potential existence . . . potentiality.”<sup>55</sup> Further, she expands on the concept by asserting that the

[c]ontemporary use of the term ‘virtual’ has been associated with many fields, but especially with computers and computational media where the term has been extended to a type of computer phenomenon that generates a virtual space that living, breathing human beings accept as a reality, a virtual reality. Unlike [the traditional understanding of] physical reality, virtuality and its attendant virtual space connote an environment that coalesces from electric phenomena driving computationally mediated bit streams of information to interplay with human ingenuity and imagination. Virtuality is experienced as if it were a real realm. The question can be raised: Is it real?<sup>56</sup>

---

<sup>55</sup> *From Cyberspace to Outer Space*, *supra* note 50, at n. 2 (citing MERRIAM-WEBSTER’S COLLEGIATE DICTIONARY 1397 (11<sup>th</sup> Ed. 2003)).

<sup>56</sup> *See, From Cyberspace to Outer Space*, *supra* note 50, at 220. *See also generally, Legal Rights and Accountability of Cyberpresence*, *supra* note 50, at 311-326.

In this context, group systems designer Murray Turoff asserts that “what is possible with computers is not a representation of reality as we know it but a new essence or a new reality that may be different from anything we have known before.”<sup>57</sup> Further, Turoff believes that

“[V]irtuality is the property of a computer system with the potential for enabling a virtual system (operating inside the computer) to become a real system by encouraging the real world to behave according to the template dictated by the virtual system. In philosophical terms, the property of virtuality is a system’s potential evolution from being descriptive to being prescriptive.”<sup>58</sup>

All in this context, Dr. Lauria and the instant author believe that traditional jurisprudential concepts and definitions in implementing positive laws will need significant reworking in order to respond to various technologies and biotechnologies developing faster than cultural, societal, and civilization jurisprudences can respond and adapt. These authors dealing with exponentially advancing technologies are forcing jurisprudential attention toward a special body of positive laws that address the developing vagaries of *Homo sapiens sapiens* in the form of transhumans, which the authors seem to believe already exist. Given the direct intervention of pharmaceuticals, surgical implants, and limited genetic manipulation, and the like, already being performed on human specimens, including certain aspects of astronaut physiology, regardless of whether unnecessarily transmittable sexually, it is not pressing the envelope of *transhumanism* to say that the phenomenon already exists.<sup>59</sup>

From this reasonably disciplined speculation, a more pragmatic characterization of the potential jurisprudential issues (already existing with respect to Earth-indigent legal systems and the activities of cyberpersona operating “strictly” in cyberspace) can be seen in contemporary discussions and cases in-

---

<sup>57</sup> M. Turoff, *Virtuality*, 40 COMM. OF THE ACM (1997).

<sup>58</sup> *See, id.* at 38.

<sup>59</sup> In this context, see George Robinson, *The Search for Biogenesis and the Lurch Toward Space Law Secularism*, XXXIV Annals of Air and Space L., 645, 674-691 (2009) [hereinafter *The Search for Biogenesis*].

volving the issue of Earth indigent legal systems asserting jurisdiction over cyberspace and cyberpesona activities.<sup>60</sup> The related cases and specific issues being argued might be considered the closest approach to contemporary Metalaw principles and the evolution of two distinct interfacing legal systems which might be ignoring that portion of the Interstellar Golden Rule addressing the rights and responsibilities of humans interfacing with the culture of alien life forms, i.e., an assertion of independent cyberpesona; an entity considered by many as a distinctly separate and independent personality functioning in cyberspace. For humans and/or transhumans projecting their cyberpesona into cyberspace from, say, the International Space Station, the multilateral agreements of participating nations cover relevant issues regarding activities of their citizens in cyberspace.<sup>61</sup>

---

<sup>60</sup> See, e.g., a discussion of issues of law relating to whether Earth indigent jurisdiction can be asserted over e-commerce deriving from cyberspace for purposes of taxation, by Rifat Azam, *E-Commerce Taxation and Cyberspace Law: The Integrative Adaptation Model*, 12(5) VA. J. OF L. AND TECH., 1-32 (Summer 2007). See also, Betsy Rosenblatt, *Principles of Jurisdiction on the Internet*, <http://cyber.law.harvard.edu/property99/dmain/Betsy.html>. See State of Minn. V. Granite Gate Resorts, Inc., 568 N.W.2d 715 (1997) (for an interesting discussion of a defendant's activity in cyberspace and the issue of personal jurisdiction), & Panavision International v. Toeppen, 141 F.3d 1316 (9th Cir. 1998) (dealing with personal jurisdiction applicable to conduct that occurred, *in part*, in cyberspace). Note that the term "cybernation" is usually characterized as the control of processes by computer, and the term "cyberculture" denotes cognitive processes, or the culture that emerges from the use of computers for communication activities strictly *in* cyberspace. Note also, that the term "cyberspace" is credited to William Gibson, who used it in *Neuromancer*, a novel written in 1984. Gibson "defines cyberspace as 'a consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts . . . A graphical representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the non-space of the mind, clusters and constellations of data.'" WILLIAM GIBSON, *NEUROMANCER* 128 (New York: Berkely Publishing Group, 1989). *Cyberspace*, TECHTERMS.COM, <http://www.techterms.com/definition/cyberspace> (last visited Apr. 25, 2013).

<sup>61</sup> See, 1998 Intergovernmental Agreement on Space Station Cooperation, available at [http://www.spacelaw.olemiss.edu/library/space/International\\_Agreements/Mulilateral/ISS\\_IGA/1998%20-%20Agreement%20Among%20Canada,%20ESA%20States,%20Japan,%20Russia,%20and%20the%20United.pdf](http://www.spacelaw.olemiss.edu/library/space/International_Agreements/Mulilateral/ISS_IGA/1998%20-%20Agreement%20Among%20Canada,%20ESA%20States,%20Japan,%20Russia,%20and%20the%20United.pdf) (last visited Sept. 6, 2013) (signed on 29 January 1998 by fifteen governments involved in the Space Station project), & the Code of Conduct for the International Space Station, 14 C.F.R. §1214.403 (2012). For a joint discussion by governmental representatives of the U.S., Russia, Japan, and the Netherlands (ESA) dealing with preparations for humans beyond low Earth orbit, see K. Laurini, G. Karabadzak, N. Satoh, & B. Huffenbach, *International Space Station (ISS)*

As noted, above, Dr. Lauria and the instant author co-authored an article that explored the impact of “cyberspace” and other forms of meta-technologies on existing jurisprudential concepts and various implementing regimes of positive laws, both of which are transitioning to a somewhat mysterious existence in outer space.<sup>62</sup> In this regard, Professor Clifford Nass, of Stanford University, studies the interactions of humans and machines, i.e., how humans regard and interact with computers as though the latter were living human beings.<sup>63</sup> In a recent interview, Nass observed that “[p]eople are more accepting now than they used to be of having technologies that are more richly and clearly social. They want personality, they want something that will joke or be more present.”<sup>64</sup> When asked about the appearance and “nature” of human interactive technology, Nass observed that

[i]t would have a human face (because people love human faces), a human voice and a very clear personality. It would be extroverted and friendly. It’d use a lot of vocal range and it would be highly expressive. It would encourage you to talk back to it in natural language. It would understand all the social rules—it would flatter, it would understand your emotions and it would respond with similar emotions. It would do things to make people feel like they were part of its team.<sup>65</sup>

The relevant significance of these observations rests with the growing recognition, and perhaps acceptance, that advanced

---

*Lessons Learned and their Influence on Preparations for Human Exploration Beyond Low Earth Orbit*, in 62<sup>ND</sup> INT’L ASTRO. CONG. (Cape Town, SA, IAC-11.B3.2.1).

<sup>62</sup> *From Cyberspace to Outer Space*, *supra* note 50.

<sup>63</sup> Professor Nass is director of the Communication between Humans and Interactive Media (CHIME) Lab. In a recent book with Corrina Yen, Prof. Nass asserts that his research shows humans interact with and treat their computers and similar technology as though they are humans, i.e., we empathize, argue, and form humanlike bonds with them. According to Nass, some humans even lie on occasion to their computers and other interactive technologies to protect their feelings. *See*, C. NASS & C. YEN, *THE MAN WHO LIED TO HIS LAPTOP: WHAT MACHINES TEACH US ABOUT HUMAN RELATIONSHIPS* (New York: Penguin/Current, 2010).

<sup>64</sup> Bianca Bosker, *Clifford Nass On “Seductive” Tech And Why You Treat Your Phone Like A Friend*, HUFFINGTON POST (Mar. 3, 2013), [http://www.huffingtonpost.com/2013/03/03/clifford-nass\\_n\\_2792780.html](http://www.huffingtonpost.com/2013/03/03/clifford-nass_n_2792780.html).

<sup>65</sup> *Id.*

artificial intelligence *in extremis* may be reaching the point of biotechnologically independent personalities, resting in large part on traditional components of what constitutes a biological system, such as self-replication of which certain nanotechnology is capable, and metabolic activities, of which certain technologies may be considered to be more efficient and effective than that relied upon by traditional carbon based life forms. These types of technological and biotechnological advances seriously invoke the need to start addressing the issues of what constitutes transhumans and even independent, self-replicating and metabolizing life in the form of biotechnologically integrated post humans...descendants of *Homo sapiens sapiens* and perhaps even extraterrestrially originated life forms not descending from *humankind*. The principal issue in the post human context involves determining at what point and under what circumstances applicable jurisprudence and positive legal regimes must regard post humans as totally independent entities responding to a completely non-Earth oriented or generated jurisprudence, i.e., the concept of a universal Metalaw applicable to all life forms. The relevance of these seemingly science fiction issues and characterizations is 1) humans, as previously noted, may be considered close to creating transhumans (depending upon the rules of definition applied) and even post humans. The immediate issue in the context of the applicability of Metalaw principles to humans and their interactions with and among transhumans and post humans is whether and when those principles would apply, and under what circumstances. Further, the Metalaw component addressing what Andrew Haley referred to as the Interstellar Golden Rule might well apply to *permanent* off-Earth modern human inhabitants domiciled in near Earth orbits, such as the International Space Station, and ultimately in permanent habitats on other celestial bodies such as Earth's moon and Mars, etc.<sup>66</sup>

---

<sup>66</sup> In the context of astronaut behavior under the influence of applied medical dictates and those of an alien, synthetic life support system, see A. Farand, *Astronauts' Behavior Onboard the International Space Station: Regulatory Framework*, in LEGAL AND ETHICAL FRAMEWORK FOR ASTRONAUTS IN SPACE SOJOURNS: PROCEEDINGS OF THE ECSL/ESA/IDEST/UNESCO SYMPOSIUM (House of UNESCO, Paris, Oct. 29 2004). Astronauts are subject to numerous variations in behavior patterns and abnormal medi-

C. *Current Protection of Potential Solar System  
Extraterrestrial Habitats*

A final observation regarding the potential applicability of Metalaw principles and the Interstellar Golden Rule relates to the current and serious issues regarding what is termed Planetary Protection in past and current domestic and international space exploration programs, i.e., procedures relating to outbound and back contamination potentials; particularly as they relate to compromising the search for extraterrestrial life.<sup>67</sup> At what point, for example, should a single cell or basic unit of organic life as it is presently understood, be considered one component of a larger entity that manifests some form or even critical component of whole-body “intelligence?” Much like the human body? Its hominid ancestors? And the components of Earth’s biosphere that, through trial and error on the bush of evolution, resulted in sentient organic entities, perhaps even the next evolutionary step in that evolution embodied in biotechnologically integrated post humans? Are , for example, protohominids disfranchised from a human-recognized form of “intelligence?” Would *Homo neanderthalensis* be considered an intelligent “race” that is self-aware of its interim role in evolving sentient characteristics?<sup>68</sup> Is “intelligence,” regardless of how de-

---

cal conditions while under the influence of off-Earth space flight, such as decompression sickness, barotrauma, immunodeficiencies, loss of bone and muscle, loss of eyesight, orthostatic intolerance due to volume loss, sleep disturbances, and radiation injury, all of which influence otherwise normative value forming processes and behavior patterns while in space. For an excellent coverage of the significant changes to human morphology and ultimate interpersonal behavioral values and patterns, see “Effect of space flight on the human body” at [http://en.wikipedia.org/wiki/Effect\\_of\\_spaceflight\\_on\\_the\\_human\\_body](http://en.wikipedia.org/wiki/Effect_of_spaceflight_on_the_human_body).

<sup>67</sup> In this context, see NASA Policy Directive NPD8020.7G, Subject: Biological Contamination Control for Outbound and Inbound Planetary Spacecraft, in which it is stated that, “The Conduct of scientific investigations of possible extraterrestrial life forms, precursors, and remnants must not be jeopardized (effective until Nov. 25, 2013).

<sup>68</sup> See, *A Draft Sequence and Preliminary Analysis of the Neanderthal Genome*, *supra* note 31 (regarding the status of research on several Neanderthal genomes). One of the abiding issues for determination is whether an attempt ultimately should be made to use the results of the research to “re-create” a living Neanderthal specimen. Further, consistent with the basic principle underlying the concept of Metalaw, the question would be raised whether such a specimen would have the same protections as an intelligent, non-human extraterrestrial. Or perhaps it would fall under the various domestic

fined, the terminal result of all life-form evolution - individual or societally collective?

Answers to these questions, even attempts at answers to these questions, may, indeed, will, give serious pause to any application of a non-empirical assessment of “intelligence,” “race,” and the like, in the context of biological and biotechnological evolution. It certainly will give cause to reassess the “rules” of space exploration and, in particular, the seeking of extraterrestrial life forms, in the context of the ultimate dictate of all organic life genomes (i.e., competition for survival). Again, leaving aside some vague and non-empirically based humanistic understanding of “altruism” (of which many societies of lower orders of animals such as the common honey bee exhibit) words such as “moral,” “ethical, and the like, that remain undefined in context of species or even specimen survival are no more than temporary physical safeguards for a biological society’s survival in the face of competition. This reality is embraced in all jurisprudential concepts and implementing positive laws finding their origins and foundations in the dictates of an ever-evolving Natural Law Theory and dependent jurisprudential concepts and implementing positivisms (e.g., domestic legislation, multi-lateral agreements in the international arena, treaties, etc.). The consequence relative to Metalaw, and certainly the Interstellar Golden Rule, is that the integral components or principles of each are, at very best, in constant transition.

#### IV. A FINAL, YET INTERIM, REFERRING TO THE ROLE OF METALAW AND ITS PRINCIPLES APPLICABLE TO TRANSHUMANS AND POST HUMANS: CONCLUDING OBSERVATIONS

- To some, Metalaw is a tool that catalyzes the essence of *intraspecies* and, in context, *interspecies* relations to ensure some form of empirically, but loosely, undefined “ethical” and “moral” behavior, a sense of “fairness,” allowing biological societies to evolve or survive naturally without external interference. But more than that, Metalaw, with or without being recognized and accepted for what its component prin-

---

and international laws protecting endangered species with indicia of recognizable “intelligence,” such as the cetaceans, etc.

principles are designed to accomplish, is the very essence of awareness of the dictates of humankind evolution and survival as a species, past, present, and into the future, with the descendants of Modern Humans. The steps toward the evolutionary future of evolving humans and the essence that *may* set this species apart from all others, could well be embodied in “virtuality,” and the immediate and pragmatic consequences of this recognition of the nature and properties of “virtuality” may be seen in the legal confrontations between Earth-based jurisprudence and that perceived by some to embody those unique to cyberpersona functioning solely in cyberspace.

- The principle underlying the Interstellar Golden rule is a non-secular humanistic “faith.” In this context, such a rule does not ensure the survivability of the best interim genome to continue the search for “purpose.”
- Change just one component of the biochemical underpinnings of organic life and its evolution, and the consequences of survival - *meaningful* survival beyond the Anthropic Principle -flowing from application of Metalaw principles may well fail when confronted by the dictates of organic evolution; perhaps even the very dictates of Creation. In the end, Metalaw principles may well ensure the termination of biochemical evolution; or ensure the ongoing odyssey of humankind essence (to understand the what, why, and who of creation) in an as yet unfathomable form of biotechnological integration, or an incomprehensible form of pure technological sentience, true post humans.
- Metalaw was formulated to enhance the survivability of the pristine odyssey of humankind sentience in seeking to understand the components of, and reasons for, its existence. Therefore, leaving aside any non-biochemical definition of altruistic species and specimen behavior, the Interstellar Golden Rule as a component of Haley’s Metalaw is intended either to discard survival and perpetuation functions of a specific genome, or ensure the survivability of a competitor genome by “doing unto others as they would have you do unto them.” This is the underlying Natural Law construct for all space law, i.e., space jurisprudence and implementing positive laws.

- “The ability to migrate successfully to more survival-compatible environments is an inflexible biological dictate. Migration assumes many forms and is manifest in endless contexts. There is a great tendency for most policy-makers, legislators, and lawyers implementing those policies and laws to raise modern humans all too frequently substantially above their biological origins - their biochemical foundations [and evolutionary dictates towards survival, or extinction]. *For Homo sapiens sapiens* and its transhuman/post human descendants, space migration has become an impending critical dictate for survival, not only of the physical embodiment of the specieskind, but for what humans in currently understandable empirical ignorance refer to as ‘human essence’ or ‘human nature.’”<sup>69</sup>

Again, in this context, the instant author notes that

- “[i]t is the unforgiveable tendency of domestic, international, and global policymakers to ignore the cosmic clock seemingly ticking with ever-increasing rapidity, and its interplay with the evolutionary progress of *Homo sapiens sapiens*...with modern humankind; and the ability of that steadily ticking clock to compromise the survivability of biological and biotechnological sentience of humankind abstract conceptualization/perception relating to the as yet empirically unknown. Time truly is of the essence [and the current analyses and compromising of the original definition of Metalaw throughout its transitional phases to reflect these biological/biotechnological realities of *Homos sapiens sapiens*, transhumans, and post humans hopefully will force a globally shared philosophic construct that these entities are first and foremost of concern to proponents of human space exploration, including the search for, and ultimately interaction with, extraterrestrial intelligence].”<sup>70</sup>
- A transhuman is defined in several different ways, but generally is considered a biotechnological or technological in-

---

<sup>69</sup> See George Robinson, *Space Law, Secularism, and the Survival of Humankind “Essence”*, 2(1) J. OF SPACE PHIL. (Spring 2013).

<sup>70</sup> See generally, George Robinson, *End of the Humankind Odyssey? Explore, Discover, Migrate, Adjust, and Survive...or Become Extinct*, 3 J. Space & Evolution, <http://www.eaglehill.us/subscriberSPAEVO/pdfs-policy-series/SPAEVO-policy-3.pdf>.

termediary form between a human and the hypothetical (but perhaps not quite so hypothetical at this point in time) post human. Transhumans are considered significantly more than “wishful thinking” by serious scientists as well as “pseudo-scientists.” Transhumanism is considered on the very threshold of giving rise to the next step in this form of humankind evolution,<sup>71</sup> i.e., the creation of advanced artificial intelligence *in extremis* with a variety of other biotechnological assets leading to independent accountability as a subspecies of *Homo sapiens* or, indeed an entirely new and independent species, a “post human.” The critically important aspect of the high likelihood of post human descendants of humankind is the need to determine at what point such entities are truly independent of all aspects of their human forerunners/progenitors that they may be held independently accountable under Natural Law and implementing jurisprudence/positive law deriving from human societies or, indeed, other “intelligent” life forms subject to the prevailing principles embodied in Metalaw. If the post humans are permanent inhabitants of off-Earth space, then they must be treated as self-replicating and metabolizing extraterrestrials subject to whatever the prevailing and applicable dictates of Metalaw may be at the time of interaction with humans.

- A post human, for purposes of the present discussion, may be considered in general terms as the point of an entity becoming totally independent with independent accountability regarding decision-making and attendant activities... independent of the taxonomic characteristics of predecessor humans. Some would consider post humans to be more than just different from its human predecessor, i.e., designed for superiority in sentient and certain functionally operative capabilities.<sup>72</sup>

---

<sup>71</sup> For an interesting, relatively early, discussion of the history of transhumanism, see *Transhuman History*, in NATASHA VITA-MORE, *CREATE/RECREATE: THE 3<sup>RD</sup> MILLENNIAL CULTURE* (2000), <http://www.transhuman.org/transhistory.htm>.

<sup>72</sup> For a variety of discussions and characterizations regarding the “nature” of post humans, see DAMIEN BRODERICK, *THE SPIKE: HOW OUR LIVES ARE BEING TRANSFORMED BY RAPIDLY ADVANCING TECHNOLOGY* (New York: Forge, 2001); N. KATHERINE HAYLES, *HOW WE BECAME POST HUMAN: VIRTUAL BODIES IN CYBERNETICS, LITERATURE AND INFORMATICS* (Chicago: Univ. of Chicago Press, 1999); & R. KURZWEIL, *THE AGE OF SPIRITUAL MACHINES: WHEN COMPUTERS EXCEED HUMAN INTELLIGENCE* (New York:

- “[i]n terms of conscious awareness and of sentient or abstract perception driving from the evolution of carbon based life, it may well be said that the universe, or creation, has found a way to know itself. And that is the purpose of ensuring survival of the human species and its biotechnologically enhanced descendants; of ensuring the survival of the essence or nature of humankind to continue the odyssey of knowing itself and its Creator . . . of, perhaps, *knowing* the Creator. Survival of the species or *specieskind*, then, is the objective of all human formulated jurisprudence and implementing legal systems. That is the objective of ‘ethics’ and ‘morality’ behind the biological laws designed to enhance the search for extraterrestrial life.”<sup>73</sup>
  
- “[T]he underlying empirical knowledge of why we must seek indicia of extraterrestrial life, current or paleobiotic (and even the abiotic conditions that may well give rise to incipient basic life forms) is critical to determining the best standards and practices for protecting against adverse environmental changes on Earth from these activities and also from harmful forward contamination potentials...Ignoring the empirically quantifiable aspects of the causes driving human behavior manifestations with which the policy makers, legislators, jurists, enforcement officials, and practicing lawyers must deal, will lead to false assumptions regarding human behavior and the laws needed to control that behavior toward an evolving species and its survival objective....”<sup>74</sup>

---

Viking Press, 1999). For an interesting very early observation regarding the evolution of the human mind, see Marquis de Condorcet (Marie Jean Antoine Nicholas Caritat), *The Future Progress of the Human Mind* (1795), available at <http://www.fordham.edu/halsall/mod/condorcet-progress.html>.

<sup>73</sup> *The Search for Biogenesis*, *supra* note 59, at 677 (2009).

<sup>74</sup> *Id.* at 682-683. It should be noted that the UN Committee on Space Research (COSPAR) has assumed a responsibility to conduct an assessment of the “ethics” and of the law relating to astrobiological research. In the United States, the Planetary Protection Committee of the Science Advisory Committee for the National Aeronautics and Space Administration, noted in its 2008 report that “[o]ne of the major science questions is whether life exists, or at one time existed, elsewhere in the universe . . . As we do so, we must assure that we do not undermine the scientific exploration by contamination with terrestrial organisms . . . Planetary protection...is an ethical obligation that is embodied in international agreements.”(The report is on file at NASA in the Office of the Administrator.) While this obligation appears on the surface to be limited to safeguard-

Again, these views emphasize the need to define carefully a secular philosophic construct shared globally among all humankind that underlies the real evolved premise of Metalaw, i.e., the physical survivability of representatives of *Homo sapiens sapiens* and, more important, the survivability and evolution of the “essence” of the species that justifies its anthropocentric odyssey, and that of its transhuman and post human descendants, including the shoulders of its evolved single cell progenitors on the evolutionary bush upon which the *humankind* species stands. Metalaw is a secular jurisprudential concept in transition, the component principles of which, in their implementation, could ensure an empirically designed set of secular rules for humankind space exploration that, perhaps hopefully, might lead to the discovery of extraterrestrial life, “intelligent” or not. Some of the immediate issues that need to be addressed and explored include whether “intelligence” should be the defining factor; whether carbon based life should/will be the defining factor, and if sentience and abstract perception are or should be the defining factors of intelligence. And, finally, whether *Homo sapiens sapiens* and its transhuman and post human descendants are or should be the determining factor as to whether “interference” is acceptable, regardless of whether intelligent.

Metalaw, like all existing and future domestic and public/private international space law, must be based upon the underlying philosophic construct of survival of the “essence,” of the purpose and reason, of and for *Homo sapiens sapiens* and its biotechnological and fully technological descendants. Metalaw must always be considered “a work in progress,” and not be constrained by humanistic and non-empirically defined principles of “wishful thinking.” Humanistic forms of “faith” must always support a realistic embodiment of Metalaw in constant transition...or *Homo sapiens sapiens* and its descendants may well be retired from their secular odysseys in search of reason and purpose, much in the manner that its hominid ancestors became extinct.

---

ing NASA's search for extraterrestrial life, it is a critical component of assessing the applicability of certain principles set forth in the current version of Metalaw.

# JOURNAL OF SPACE LAW

Reprints of vols. 1-13 of the  
JOURNAL OF SPACE LAW  
Contact

William S. Hein & Co., Inc., 1285 Main Street, Buffalo, New York 14209

**Subscriptions** should be made payable to the “University of Mississippi, JOURNAL OF SPACE LAW” and paid for by check drawn on a U.S. bank or money order in U.S. dollars or by VISA/MasterCard:

<b>Mail Order</b>	JOURNAL OF SPACE LAW University of Mississippi School of Law 481 Coliseum Drive University, MS 38677-1858 USA	<b>Fax Order</b>	1.662.915.6921
		<b>Email:</b>	jsl@olemiss.edu
		<b>Tel:</b>	1.662.915.6857

**The 2013 subscription rate** for two issues, incl. postage and handling:

Domestic USA individuals.....	\$100.00		
Domestic organizations.....	\$120.00		
Foreign individuals, regular mail.....	\$105.00;	air mail.....	\$125.00
Foreign organizations, regular mail.....	\$125.00;	air mail.....	\$140.00

Single issues price for vols. 14-38: \$70.00

Single 2007 Special Publication Bibliography price: \$70.00

Order for 2013 Volume 39 (Nos. 1 & 2)	\$ _____.
Order for 2014 Volume 40 (Nos. 1 & 2)	\$ _____.
<b>TOTAL</b>	\$ _____.

Name: \_\_\_\_\_

Company/Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_

Country: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone No: (\_\_\_\_\_) \_\_\_\_\_; Fax No: (\_\_\_\_\_) \_\_\_\_\_

Email: \_\_\_\_\_

**For Credit Order** (please add 5%) \_\_\_\_\_ VISA \_\_\_\_\_ MASTERCARD

No: \_\_\_\_\_ Exp Month: \_\_\_\_\_ Year: \_\_\_\_\_

