

not be appropriate in procurements where the agency may have to issue a waiver since the waiver would fundamentally alter a "go/no go" criterion. The advantage of this approach is that it signals the importance of the issue since the agency will not select an offeror that fails to mitigate all conflicts. The disadvantage of this approach is that it does not permit an agency to consider the intricacies associated with OCIs.

Evaluating mitigation plans⁶⁷ allows an agency to examine these intricacies and still encourages offerors to submit the most complete mitigation plans possible; however, it is not easy to evaluate mitigation plans. Is it on the basis of the degree of conflict each offeror has; is it on the completeness of each offeror's plan; will it consider the effect the mitigation plan has on overall contract performance? Moreover, the evaluation of mitigation plans can easily become the subject of a protest given the subjective the nature of conflicts and of the "reasonableness" of individual mitigation plans.

It would appear that agencies could not waive a conflict where the mitigation plan was submitted as part of a competition since the granting of a waiver would change the evaluation scheme after receipt of proposals. During a discussion of *Alion*, however, GAO suggested agencies are able to waive conflicts as long as the solicitation informs offerors that the agency reserves the right to do so. GAO also indicated that it did not see any difference between evaluating mitigation plans on a "go/no go basis" or as an evaluation factor. Having the potential to waive seems to be more consistent with including mitigation plans in the evaluation criteria rather than using a "go/no go" factor. A waiver could be viewed as yet another facet of the overall evaluation of performance and would permit an agency to select a proposal that represents the best value as indicated by the

⁶⁷ *PURVIS Systems, Inc.*, is an example of evaluating and scoring OCI mitigation plans. In this case, GAO found Northrop Grumman's OCI plan was fundamentally flawed because the plan failed to recognize or otherwise address multiple situations that created the potential for impaired objectivity OCI concerns. Consequently, GAO stated that there was no reasonable basis for the rating the Navy gave to the contractor's score for the OCI plan. *PURVIS Systems, Inc.*, B-293807.3, B-293807.4, Aug. 16, 2004, 2004 CPD 177, *PURVIS* demonstrates how difficult evaluating OCI plans can be given the need to identify all possible OCIs and the subjective nature of OCIs.

evaluation criteria, even though the offeror has not completely mitigated all OCIs.

NASA could decide to consider an OCI mitigation plan, but not make the plan an element in evaluation. This approach does not preclude the use of a waiver. Under this approach, NASA would try to obtain the most complete/acceptable OCI mitigation plan from each offeror through discussions. Handling mitigation plans outside of the evaluation process probably is best used when the issue of conflicts does not appear to be a factor for final selection since the source selection official would not be able to consider OCI concerns during deliberations.

*Epoch*⁶⁸ provides an example where an agency considered OCI mitigation plans outside of the evaluation plan. In this case, GAO held that OCIs were not part of the evaluation scheme, stating

The RFP stated that proposals would be evaluated on personnel, corporate experience, technical understanding, management plan, and facilities factors. The RFP included a very detailed discussion about how the Navy would evaluate each of those factors. Conspicuously absent from the RFP's discussion is any indication that the technical/understanding evaluation would consider the effects, if any, of an offeror's conflict mitigation plan. Moreover, when the Navy amended the RFP to clarify its position regarding conflicts of interest, the evaluation scheme was not altered to include a technical/management evaluation of the proposed conflict mitigation plans.⁶⁹

Regardless of which approach is selected, NASA needs to be prepared to conduct lengthy discussions regarding each OCI mitigation plan, something that would preclude making award based upon initial proposals. Section 9.504 (d) of the FAR requires that the contracting officer notify the contractor about concerns regarding its mitigation plan and allow the contractor a reasonable opportunity to respond before determining to withhold award based upon conflict of interest considerations.

⁶⁸ *Epoch Engineering, Inc.*, *supra* note 53.

⁶⁹ *Id.*

The acquisition schedule must reflect sufficient time to evaluate the completeness of each offerors' mitigation and then to discuss any deficiencies contained in the offerors' plans.

VI. SUGGESTED COURSE OF ACTION

Dealing with organizational conflicts of interest is labyrinthine. Case law reveals that GAO and the COFC are not giving contracting officers as much discretion as they had in the past, setting a higher bar for compliance with subpart 9.5 of the FAR. *Alion* for example, indicates GAO will sustain a protest when it determines that the mitigation is not reasonable. At the same time, the number of OCIs is increasing due to trends within contracting, the government, and industry. Affiliates are treated the same as contractors for purposes of OCIs associated with biased ground rules and impaired objectivity. Two of the methods to resolve OCIs discussed in the FAR, requiring limitations on future contracting and creating firewalls, are no longer very effective. Case law provides that firewalls only resolve conflicts due to unfair access to data and contractors often refuse work if it is accompanied with a limitation on future contracting.

Moreover, the area of OCI is subjective. When is a conflict significant? When is a conflict speculative or remote? When is a mitigation plan acceptable given the fact that certain conflicts cannot be successfully avoided or mitigated? When do the interests of the program trump concerns associated with organizational conflicts of interest? Additionally, it is not possible to anticipate all situations where a potential OCI could arise. Each situation must be examined individually and may require different ways to resolve the conflict. Nevertheless, there are certain prescribed steps agencies should employ regarding OCIs.

- Analyze the Requirement to Identify and Evaluate OCIs Early in the Acquisition Process

Agencies have more flexibility to resolve conflicts the earlier a conflict is identified and considered in the acquisition process. The analysis should begin with the scope of future contracts since limiting the size of the requirement is a good method agencies can use to avoid OCIs. Additionally, agencies can con-

sider awarding using an ID/IQ contract for those portions of the statement of work that contain OCIs since an ID/IQ arrangement facilitates the use of teaming arrangements, which can be an effective way to mitigate conflicts of interest. Having Shuttle contractors perform Exploration work that does not involve the contractor's subjective judgment also is an excellent way to ensure there will not be any OCIs based upon "impaired objectivity" or "biased ground rules."

In addition, prior to allowing Shuttle contractors to perform Exploration requirements, the analysis of OCI's should include whether it is possible to mitigate the conflicts acceptably and/or whether a waiver would be appropriate.

- Require an OCI Mitigation Plan

Using Shuttle contractors to perform Exploration requirements probably will create some organizational conflicts of interest. At a minimum, ESMD's requirement to compete its requirements increases the likelihood that OCIs would be created if NASA uses *Shuttle* contractors for the agency's near-term Exploration requirements. The desire to use *Shuttle* contractors to the maximum extent possible may preclude use of certain techniques to avoid conflicts. Furthermore, existing *Shuttle* contractors probably would refuse to perform near-term Exploration requirements if they were required to accept some type of limitation on contracts for future Exploration requirements. Mitigation, therefore, appears to be the most relevant tool NASA has to resolve OCIs associated with using *Shuttle* contractors for ESMD requirements.

Having a firewall to resolve conflicts due to "unfair access to data" should be a standard requirement when *Shuttle* contractors perform work associated with Exploration requirements. The clause at 1852.237-72 on Access to Sensitive Information in the NASA FAR Supplement⁷⁰ addresses many of the

⁷⁰ The NASA FAR Supplement clause on Access to Sensitive Data at 1852.237-72 reads:

elements needed for such a firewall; however, it would be necessary to ensure that personnel with the access to the data are not

ACCESS TO SENSITIVE INFORMATION
(JUNE 2005)

(a) As used in this clause, "sensitive information" refers to information that a contractor has developed at private expense, or that the Government has generated that qualifies for an exception to the Freedom of Information Act, which is not currently in the public domain, and which may embody trade secrets or commercial or financial information, and which may be sensitive or privileged.

(b) To assist NASA in accomplishing management activities and administrative functions, the Contractor shall provide the services specified elsewhere in this contract.

(c) If performing this contract entails access to sensitive information, as defined above, the Contractor agrees to -

(1) Utilize any sensitive information coming into its possession only for the purposes of performing the services specified in this contract, and not to improve its own competitive position in another procurement.

(2) Safeguard sensitive information coming into its possession from unauthorized use and disclosure.

(3) Allow access to sensitive information only to those employees that need it to perform services under this contract.

(4) Preclude access and disclosure of sensitive information to persons and entities outside of the Contractor's organization.

(5) Train employees who may require access to sensitive information about their obligations to utilize it only to perform the services specified in this contract and to safeguard it from unauthorized use and disclosure.

(6) Obtain a written affirmation from each employee that he/she has received and will comply with training on the authorized uses and mandatory protections of sensitive information needed in performing this contract.

(7) Administer a monitoring process to ensure that employees comply with all reasonable security procedures, report any breaches to the Contracting Officer, and implement any necessary corrective actions.

(d) The Contractor will comply with all procedures and obligations specified in its Organizational Conflicts of Interest Avoidance Plan, which this contract incorporates as a compliance document.

(e) The nature of the work on this contract may subject the Contractor and its employees to a variety of laws and regulations relating to ethics, conflicts of interest, corruption, and other criminal or civil matters relating to the award and administration of government contracts. Recognizing that this contract establishes a high standard of accountability and trust, the Government will carefully review the Contractor's performance in relation to the mandates and restrictions found in these laws and regulations. Unauthorized uses or disclosures of sensitive information may result in termination of this contract for default, or in debarment of the Contractor for serious misconduct affecting present responsibility as a government contractor.

(f) The Contractor shall include the substance of this clause, including this paragraph (f), suitably modified to reflect the relationship of the parties, in all subcontracts that may involve access to sensitive information

the same personnel who would be involved in preparing proposals for future competitions.

OCIs regarding impaired objectivity and biased ground rules will be more difficult to mitigate. Firewalls by themselves are not an acceptable type of mitigation and affiliates are treated in the same manner as the contractor/subcontractor performing the effort. Moreover, it is likely that some of the near-term Exploration requirements will require the subjective judgment of the contractor. This paper describes various techniques agencies have used to mitigate conflicts. Each situation probably will involve different fact patterns and, therefore, mitigation must be done on a case-by case basis. Two mitigation techniques that may be of most value are using "firewalled" subcontractors to perform certain requirements and disseminating information to all offerors. The use of an ID/IQ contract also may be another way to mitigate conflicts. Although the ID/IQ contract may contain a broad SOW that could create conflicts, NASA is able to monitor the issuance of the orders to ensure that the actual work done by *Shuttle* contractors for Exploration does not create a conflict.

- Execute a Waiver if Required

When conflicts cannot be sufficiently mitigated, an agency is able to determine that it is in the best interests of the Government to award a contract notwithstanding the conflict. Section 9.503 of the FAR sets forth the procedures to waive OCIs if doing so is in the best interests of the Government. Waivers do not eliminate the issue of OCIs; waivers merely shift the issue of OCIs from the contract formulation phase to the contract administration phase since an unresolved OCI still could have an adverse effect on the performance of a *Shuttle* contractor. It is important that NASA take all other measures to avoid, neutralize, or mitigate the conflict before seeking a waiver; these measures will lessen the tension between the program strategy and the principles on OCI contained in subpart 9.5 of the FAR.

Moreover, organizational conflicts of interest differ in the degree of seriousness, a fact that should influence NASA's use of waivers. It appears that OCI's regarding "impaired objectivity" may be most susceptible to waiver since it probably would be

easier to explain why it is in the best interests of the Government not to apply subpart 9.5 of the FAR to a particular program. For example, conflicts due to "impaired objectivity" may be somewhat more remote when the conflict is due to an affiliate's interest. Moreover, it may be possible to monitor a conflict based upon "impaired objectivity" after award by having another entity verify the objectivity of the advice being received.

On the other hand, it probably would not be appropriate to waive OCIs regarding "unequal access to information" since these conflicts can be successfully mitigated by firewalls. Additionally, care should be taken when waiving OCIs regarding "biased ground rules" since this conflict affects both the objectivity of the contractor and the fairness of future competitions. Waiving conflicts based upon "biased ground rules," therefore, would appear to place the needs of the program ahead of both the principles in subpart 9.5 of the FAR and the notion of fairness in future competitions. One could argue that waiving a conflict due to "biased ground rules" is only appropriate when the mitigation taken ensures the fairness of the future competition.

Waivers do not remove all of the complexities associated with OCIs; however, waivers can be a useful tool to allow program strategy to take priority over the OCI principles when doing so is in the best interests of the Government. Since a waiver does nothing to resolve the effect of a conflict, it would seem prudent for an agency to attempt to address the issue of the conflict during contract administration. Steps taken during contract administration also can help justify why it is in the best interests of the Government to place program objectives before OCI concerns in certain situations.

VII. CONCLUSION

There is no one solution for resolving organizational conflicts of interest; contracting officers need to tailor/resolve conflicts on a case-by-case basis. The FAR and case law set forth the following basic principles that facilitate successfully identifying and resolving OCIs.

- 1) Addressing conflicts as early as possible in the acquisition process.
- 2) Understanding the underlying principles of OCIs are to “prevent the existence of conflicting roles that might bias a contractor’s judgment” and to “prevent unfair competitive advantage.”
- 3) Recognizing affiliates must be treated as if they were the contractor and subcontractor performing the contract when the OCI involves conflicting roles that might bias a contractor’s judgment, *i.e.*, conflicts based upon “impaired objectivity” and “biased ground rules.”
- 4) Understanding firewalls only effectively mitigate OCIs that could create an unfair competitive advantage, *e.g.*, conflicts based upon “unfair access to data.”
- 5) Realizing the FAR contains four techniques for resolving conflicts, *i.e.*, to avoid, to neutralize, to mitigate, and to waive, and appreciating the differences between these techniques.

The careful implementation of these basic OCI principles will ensure that NASA’s *Vision for Space Exploration* is successful from both a contractual and legal perspective.

TRANSCENDING TO A SPACE CIVILIZATION: THE NEXT THREE STEPS TOWARD A DEFINING CONSTITUTION

George S. Robinson*

Men do not live in the same place in which they are born. They look for further worlds.... And another thing, the spaceman is the only person who can travel without a visa, cross frontiers without a passport, and see the world in ninety minutes! [Georgi Beregovoi, Soviet Astronaut – 1985]¹

No national sovereignty rules in outer space. Those who venture there go as envoys of the entire human race. [President Lyndon Baines Johnson]²

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¹ ISAAC ASIMOV'S BOOK OF SCIENCE AND NATURE QUOTATIONS 307 (Isaac Asimov & Jason Shulman, eds., 1988) [hereinafter ASIMOV].

² *Id.* at 806. It should be noted that astronauts are referred to uniformly in the various United Nations space treaties as "Envoys of Mankind." For purposes of the ensuing discussions, Webster's Ninth New Collegiate Dictionary defines envoys as "messengers or representatives," regardless of whether they are human, *humankind*, biobotic, telepresences, teleoperated, teleportations, avatars, and the like. WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 417 (Merriam-Webster 1991) [hereinafter WEBSTER'S NINTH]. *In extremis*, Anton Zeilinger, in *Scientific American* (April 2000), addresses quantum mechanics underlying the concept of teleportation, which is a method of making objects "disappear" from one location and "reappear" in another. The concept was moved from theory to demonstration with the use of photons. Several other words or names referred to in this discussion have assumed slight definition variations, depending upon the discipline and context in which they are being used. Nevertheless, for the present discussion, some of these words are defined as follows: "Robot", from the Latin word *orbus* meaning orphaned, is generally considered an "automatic apparatus or device that performs functions ordinarily ascribed to human beings or operates with what appears to be almost human intelligence." WEBSTER'S NINTH, *supra* note 2, at 1019. "Biorobot" refers to the integration of biological components into the mechanical device and its operational capabilities. "Telepresence" has been defined as the projection of a user's sensory, cognitive, and motor capabilities to a distant environment, or, alternatively, the distant environment can be recreated virtually at the location of the user or

I. STEP NO. 1: THE PROPOSAL

A. *Introduction: Humans in Long-Duration and Permanent Space Exploration and Settlement*

This author previously offered a proposal³ toward creating, or allowing for the creation of, a space civilization instead of a “colony” or “colonies” as the first step toward avoiding cultural recidivism in the form of economic, political, and military imperialism off-Earth.⁴ It asserted the bio-fragility of humans in outer space, even in an alien and synthetic life support environment, particularly long-duration and permanent. It also alluded to the likely increasingly significant role of humankind biorobotics⁵ in space exploration, resource exploitation, and set-

operator. See Michael W. McGreevy, *The Presence of Field Geologists in Mars-like Terrain*, 1 PRESENCE: TELEOPERATORS AND VIRTUAL ENVIRONMENTS 375, 376 (1992). “Teleoperator” can be defined as the telepresence operator or actuator, e.g., a teleoperator’s vision can be linked to remote cameras, providing an exocentric or ergocentric frame of reference. The teleoperator can wrap a distant complex of remote actuators around him/herself, or can project local actions into distant actions, such as exploration of the surface of Mars, etc. *Id.* See, also, George S. Robinson and Rita Lauria, *Legal Rights and Accountability of Cyberpresence: A Void in Space Law/Astrolaw Jurisprudence*, 28 ANNALS OF AIR AND SPACE LAW 311, 313-314 (2003). “Avatar” is defined as an incarnation of a Hindu deity, and in the context of the present discussion of telepresence and virtual reality, it is referred to as “a variant phase or version of a continuing basic entity” or human form. WEBSTER’S NINTH, *supra* note 2, at 119.

³ George S. Robinson, *No Space Colonies: Creating a Space Civilization and the Need for a Defining Constitution*, 30 J. SPACE L. 169 (2004) [hereinafter Robinson, *No Space Colonies*].

⁴ *Id.* See also, George S. Robinson, *Rethinking Outer Space in the 200th Year of Our Constitution*, THE AIR & SPACE LAW. 3 (Fall 1987); George S. Robinson, *Re-Examination of Our Constitutional Heritage: A Declaration of First Principles for the Governance of Outer Space Societies*, 3 HIGH TECH L.J. 81 (1989); George S. Robinson, *Must There be Space Colonies? A Jurisprudential Drift to Historicism*, in PEOPLE IN SPACE: POLICY AND PERSPECTIVES FOR A NEW CENTURY (Univ. of Texas Press, 1985).

⁵ In this context, “Robonaut” is the name given to a humanoid robot designed by the Robot Systems Technology Branch at NASA’s Johnson Space Center in a collaborative effort with the Defense Advanced Research Projects Agency (DARPA). The Robonaut project is an ongoing effort to develop and demonstrate a robotic system that can function as an EVA astronaut equivalent and still keep the human operator in the control loop through its telepresence control system. At this time, despite Robonaut’s broad mix of advanced humanoid-like mobility and sensors, which includes thermal, position, tactile, force and torque instrumentation, with over 150 sensors per arm, off-board or EVA guidance is still delivered with human supervision using a telepresence control station with human tracking. For a more detailed description of the anthropomorphic

tlement. Further, the proposal was premised in part on the essential justification for human and *humankind* space migration and settlement being the actual long-term survival prospects for *Homo sapiens sapiens*⁶...or at least the survival of the “essence” of that species as embodied in altered humans or *humankind*,⁷ i.e., transhumans and other forms of biotechnologically integrated and enhanced humans.⁸

Humans seem on occasion to have raised themselves too far above their biological origins and dictates in trying to under-

Robonaut, see *Robonaut*, http://vesuvius.jsc.nasa.gov/er_er/html/robonaut/Robonaut_2.html (last visited June 29, 2006).

⁶ In the context of driving factors behind the acceleration of potential extinction of much of Earth’s web of life upon which survival of *Homo sapiens sapiens* depends in an Earth environment, see generally, NILES ETHRIDGE, *LIFE IN THE BALANCE: HUMANITY AND THE BIODIVERSITY CRISIS* (2d ed. 2000). For an abbreviated, but fascinating, study of current theories and scientific controversies regarding the periods and causes of mass extinctions, see Karen Wright, *The Day Everything Died*, 26 *DISCOVER* 64 (April 2005).

⁷ The term “*humankind*” is emphasized and used in the instant discussion to reflect various significant, but transitory, surgically, pharmaceutically, biologically, and technologically induced changes to representatives of *Homo sapiens sapiens* to allow temporary, enhanced functioning and survivability in a specific alien life-support environment.

⁸ While it must be recognized that many of the lower orders of primates, cetaceans, and, indeed, many of the socially oriented insect colonies ... and even certain plant life ... have the capacities to use simple available tools to carry out individual and communal activities for purposes of individual and collective survival, it is not a characteristic used to direct a given species’ biological evolution. *Homo sapiens sapiens* is the only exception recognized at this point whereby a carbon based life form (1) uses its own new and constantly refined technologies and biotechnologies to (2) adapt to external and internal macro- and micro-environmental changes of the individual and its biosocial community (i.e., to survive as a species or variant thereof), and (3) evolve in the successful process of the first two. See Nick Bostrom, *Transhumanist Values*, <http://www.nickbostrom.com/tra/values.html> (last visited June 29, 2006). See also, James Hughes, *Democratic Transhumanism*, *TRANSHUMANITY* (April 16, 2002), <http://www.transhumanism.org/index.php/th/more/286/> (last visited June 29, 2006); Doug Bailey, *et al.*, The Transhumanist Declaration (2002), <http://www.transhumanism.org/index.php/WTA/declaration/> (last visited June 29, 2006). Steven Johnson highlights complex organic life forms that robotics must be able to mimic in order to approximate independence in self-maintenance by encouraging his readers to “think of the army of cellular agents, including white blood cells and platelets, that jump into action over a mere paper cut, rebuilding the tissue, warding off infection, and alerting the rest of the body to the wound through the A-delta fibers of the nervous system, which are involved in the transmission of acute pain sensations.” Steven Johnson, *Self-Assembling Robots*, 26 *DISCOVER* 20 (April, 2005). He addresses the complexities of robotic self-replication when relying on organic life characteristics by noting that “DNA has an elaborate system for minimizing errors when it makes copies of itself. Otherwise, multicellular life would be filled with an intolerably high number of defects.” *Id.*

stand the essence of being human, and the levels of expectation they have in order to establish acceptable social and cultural interactions institutionalized in positive law. But they in fact have not raised themselves far enough above their biological origins if enhanced "intelligence" based upon human biotechnological integration capabilities are to capture the essence(s) of humankind for purposes of separate and individual accountability under law. This, in turn, raises the issue of taxonomy, i.e., how do, and will, these new variations of transhuman humankind and ultimately "post humans" fit into the Linnaean system of identifying and naming life forms? In the discipline of taxonomy, created by Linnaeus in the middle of the 18th century, all life falls within a kingdom (plant or animal), phylum, class, order, family, genus, and species.⁹ Where does the self-replicating, metabolizing, and potentially sentient, if not sapient, biorobot fit within this scheme of identification and classification? Help in resolving this issue might possibly come from the so-called "Phylocoders"¹⁰ who, if successful in their revolutionary attacks on the Linnaean taxonomic system, would have taxonomic groups defined only by the position in which they appear in the tree of life, rather than being identified by common traits.¹¹

For purposes of the present discussion, "transhuman" may be defined somewhat loosely as a biotechnologically engineered and enhanced evolution of one or more representatives of *Homo sapiens sapiens*, for example, a transitioning phase between humans and ultimately "post humans". One of the principal arguments surrounding transhumanism relates to the essence or nature of a human or humans, and whether the future of human nature "is fixed and immutable, once and forever, or

⁹ For a description of the Linnaean system of classification, see, e.g., 14 ENCYCLOPEDIA BRITANNICA *Biological Sciences* 920, 927 (1985).

¹⁰ See Christine Soares, *What's in a Name?*, 291 SCIENTIFIC AMERICAN 36 (Nov. 2004), available at http://www.scientificamerican.com/print_version.cfm?articleID=000D7477-4199-1179-819983414B7FFE9F (last visited July 11, 2006).

¹¹ For an interesting discussion of this proposed and highly contentious divergence from traditional principles of taxonomy, see Kevin de Queiro and Jacques Gautier, *Phylogenetic Taxonomy*, 23 ANNUAL REVIEW OF ECOLOGY AND SYSTEMATICS 449 (1992); T.M. Barkley, et al., *Linnaean Nomenclature in the 21st Century: A Report from a Workshop on Integrating Traditional Nomenclature and Phylogenetic Classifications*, TAXON (Feb. 2004); James M. Carpenter, *Critique of Pure Folly*, 69 THE BOTANICAL REVIEW 79 (2003).

whether it can continue to evolve.”¹² As concluded in 1970 by Loren Eiseley, one of the first biologists to bring poetry and creative literary interpretations to that scientific discipline:

Science has speculated that man has reached an evolutionary plateau. To advance beyond that plateau he must either intimately associate himself with machines in a new way or give way to “exosomatic evolution” and, in some fashion, transfer himself and his personality to the machine.¹³

Of course, transhumanism, or the evolution of individual humans into *humankind*, prior to becoming post humans, has progressed at an amazing rate in the past fifty-five years. Indeed, just in the past fifteen years, the alacrity of human biotechnological evolution and research results promising even more complex and rapid transhumanistic evolution has been nothing short of astonishing.¹⁴

The seminal observation in the earlier proposal was that the “human brain and its entire morphological and physiological support system...are capable of adjusting to new, even unique, psychopathological demands and stimuli offered by a physically and socially alien near and deep space existence” and survival requirements.¹⁵ Put a bit differently, humanity already has a strong foothold in the biotechnological intelligence age and, if humans begin to master this revolution, *Homo sapiens sapiens* shall be the first species to control and direct its own evolution. On the other hand, having this ability without first or simulta-

¹² JOEL GARREAU, *RADICAL EVOLUTION: THE PROMISE AND PERIL OF ENHANCING OUR MINDS, OUR BODIES – AND WHAT IT MEANS TO BE HUMAN* 235 (2005).

¹³ LOREN C. EISELEY, *THE INVISIBLE PYRAMID* 80 (1970).

¹⁴ See, generally, under the website for the United States Defense Advanced Research Projects Agency (DARPA) (<http://www.darpa.mil/>), such subjects as continuous assisted performance, bio-revolution program, brain-machine interface program, extra-sensory perception (proprioceptive or “sixth”sense), research of the Defense Sciences Office, artificial intelligence, etc. It can be said that DARPA is one of the leading research organizations involved in developing human enhancement technologies. Not only for military purposes, but for non-military objectives as well, the goal of DARPA and similar organizations is to merge mind and machine into a highly advanced individual...one that results in engineered humans and *humankind* “so as to directly project and amplify the power of our thoughts throughout the universe.” GARREAU, *supra* note 12, at 20.

¹⁵ Robinson, *No Space Colonies*, *supra* note 3, at 173.

neously addressing the issue of what precisely constitutes the nature or essence of *Homo sapiens sapiens* and, indeed, of transitionally advanced humankind, invokes the curious musing of the Roman Emperor-Philosopher Marcus Aurelius to "observe constantly that all things take place by change and accustom thyself to consider that the nature of the universe loves nothing so much as to change the things which are, and to make new things like them."¹⁶ The earlier proposal also noted that the technological, genetic, pharmaceutical, and bio-surgical tools either are at hand, or are close by, that are necessary to help assist in the efforts toward re-adaptation of humans to the significantly different physical and cultural ambience their biotechnologically enhanced colleagues and descendents already are experiencing in long-duration and permanent habitation off-Earth.¹⁷

B. The Impact of Human Bio-technology Integration on Relevant Legal Regimes for Long-Duration and Permanent Space Exploration and Settlement

1. Natural Law

Space habitat societies will be embracing new and evolving biological and cultural dictates giving rise, in turn, to new and perhaps unique civilizations consisting of disparate and equally as unique cultures in space. The morphological, physiological, and psychological nature of unaltered or unenhanced astronauts¹⁸ also will be affected, of course, by the alien and hostile environments of space, as well as the synthetic life support environments of space habitats; e.g., morphological changes resulting from the absence of one gravity that affects directly and indirectly the vascular, endocrine, immune, and other biosystems whose functions result in psychopathological assessments, con-

¹⁶ Quoted in ASIMOV, *supra* note 1, at 86.

¹⁷ Robinson, *No Space Colonies*, *supra* note 3, at 173.

¹⁸ Different nations use different titles for people who go into space. For example, the Soviets and Russians call their spacefarers "cosmonauts"; the Chinese "Takionauts", etc. For simplicity, only the American title "astronaut" will be used here. However, the word is not intended to refer only to a single nationality.

clusions, and judgmental actions. These biological perturbations have a direct impact on the relevance and responsiveness of various legal regimes that have evolved strictly as the result of recognized principles inherent in Natural Law theory,¹⁹ and applied in various regimes of positive laws applicable to human behavior, cultures, and civilizations on Earth's surface. Among them are, for example, that which constitutes the reasonable person test in tort law and the applicability of criteria inherent in evidentiary law. Extensive biomedical and other human factors research have illuminated numerous subtle, as well as gross, differences in astronaut biosystemics and behavior patterns resulting from the synthetic and alien life support environments of short, as well as long duration, space habitation.²⁰

Natural Law theory still underlies most jurisprudential or legal philosophies. The term "jurisprudence" has, itself, been

¹⁹ Many variations of the definition and interpretations of Natural Law, or *jus naturale*, have taken place over centuries, and the debates are ongoing. However, for purposes of the present discussion, Natural Law theory can be defined "very simply" as having been used principally by the Roman jurists of the Antonine Age in their philosophical speculations, and,

was intended to denote a system of rules and principles for the guidance of human conduct which, independently of enacted law [i.e., positive laws] or of systems peculiar to any one 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. The point of departure for this conception was the Stoic doctrine of a life ordered 'according to nature,' which in its turn rested upon the purely supposititious existence, in primitive times, of a 'state of nature,' that is, 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.

BLACK'S LAW DICTIONARY, 1177 (4th ed. 1951) [hereinafter BLACK'S]. For a more concise definition see *Black's* definition of *jus naturale*, wherein it is interpreted as consisting of "legal principles, supposed to be discoverable by the light of nature or abstract reasoning, or to be taught by nature to all nations and men alike; or law supposed to govern men and peoples in a state of nature, i.e., in advance of organized governments or enacted laws." In short, Natural Law can be said to consist of certain rights and obligations assumed by or granted to *Homo sapiens sapiens* simply by virtue of being conceived and/or birthed. It is from this concept that modern treaties and conventions rest certain declarations of what constitutes "human rights."

²⁰ See, e.g., current space biomedical publications under the aegis of the Institute of Adaptive & Spaceflight Physiology, at <http://www.meduni-graz.at/iap/pub-iap.htm> (last visited June 29, 2006). See also, Nick Kanas and Dietrich Manzey, *Space Psychology and Psychiatry*, SPRINGER (Sept. 2003).

defined with consistent inconsistency and confusion over the millennia, which continues up to the last few decades. In one instance, it is defined as the "philosophy of law, or the science which treats of the principles of positive law and legal relations."²¹ It also has been defined as the science of law, which has for its function the ascertainment of the principles on which legal rules, or positive laws implementing the principles of Natural Law, are premised.²² To keep the concept of Natural Law manageable for the present discussion the observation offered by Randy E. Barnett is used

If natural law stands for nothing else, it stands for the proposition that there is some objective standard or "higher law" against which positive (man-made) law can be measured. H.L.A. Hart characterized the classical theory of natural law as the view "that there are certain principles of human conduct, awaiting discovery by human reason, with which man-made law must conform if it is to be valid...."²³

Barnett continues by concluding that, according to the "Naturalist outlook...[t]he process of grafting a legal process around the nature of law, its purpose and aspiration, is reminiscent of ecological biology which strives to keep man in touch and in harmony with nature."²⁴ In short, for purposes of the present discussion, it can be accepted that Natural Law is not intellectually formulated by humans; that it is based on secular manifestations of reality; it is shared by all representatives of *Homo sapiens sapiens* all of the time (with only the variation in circumstances of reality enhancing or diminishing the expression of those rights at any given time); and provides the means whereby an individual or group of individuals can guide with intellectual rationality their expectations and actions in a social or societal setting. Natural Law is not a set of fixed principles.

²¹ BLACK'S, *supra* note 19, at 992.

²² *Id.* See also Harold J. Berman, *The Origins of Historical Jurisprudence: Coke, Selden, Hale*, 103 YALE L. J. 1651 (1994), and JAMES B. BRYCE, *STUDIES IN HISTORY AND JURISPRUDENCE* (2001).

²³ Randy E. Barnett, *Toward a Theory of Legal Naturalism*, 2 J. LEGAL STUD. 97 (1991).

²⁴ *Id.*

The principles of Natural Law change with changing natural circumstances that create a continuously unfolding definition of Natural Law, itself. Human knowledge of those principles is incomplete and always will be, for the foreseeable future.²⁵

2. Positive Law

Positive laws are said to be the intellectually articulated rules implementing scientific laws or principles inherent in nature, those naturally occurring as fundamental laws or principles of nature, that shape or control the involuntary and voluntary physical influences that lead to judgmental conclusions resulting in actions of individuals and groupings of individuals regarding their relations with and among one another in advance of organized governments or enacted laws.²⁶ Positive laws are formulated “so as not only to classify those [implementing] rules in their proper order and show the relation in which they stand to one another, but also to settle the manner in which new or doubtful cases should be brought under the appropriate rules.”²⁷

²⁵ See, generally, NATURAL LAW THEORY: CONTEMPORARY ESSAYS (Robert P. George, ed., 1994).

²⁶ *Id.* A variety of scholarly disciplines, including law, philosophy, political science, theology, and the like, are enjoying a revival of reassessments regarding the core principles and definitions of Natural Law theory. Clearly, the subject is not considered a relic of the past. There is an ever-widening variety of views ... wider than in the Antonine Age...shared by contemporary theorists. See, by Robert P. George, *Recent Criticism of Natural Law Theory*, U. CHI. L. REV. 55 (1988). Professor Alan M. Dershowitz, confuses morality with Natural Law principles envisaged by some of his contemporaries as well as certain of his philosophical predecessors. ALAN M. DERSHOWITZ, *RIGHTS FROM WRONGS: A SECULAR THEORY OF THE ORIGINS OF RIGHTS* (New York, Basic Books, 2004). In the process of attempting to address the theories of human rights espoused both by Divine Law and Natural Law theories, Dershowitz apparently embraces the experiential approach which rests on a “broad sense of pluralism,” thereby returning to the basics of the Antonine Age. *Id.* For Natural Law pluralism in the context of biological (and biotechnological) evolution, see STUART KAUFFMAN, *AT HOME IN THE UNIVERSE: THE SEARCH FOR THE LAWS OF SELF-ORGANIZATION AND COMPLEXITY* (Oxford University Press, 1995). As in most attempts to identify and refine precisely the indicia and characteristics of Natural Law theory, there is an almost consistent failure to define critical terms with necessary precision ... and that leads in large part to the *apparent* variations regarding the essence of Natural Law. In other words, there is more substantive agreement than dissension among even the leading Natural Law theorists.

²⁷ BLACK’S, *supra* note 19, at 992.

3. Jurisprudence

Jurisprudence is generally accepted and described as more a formal than a material science, and has no direct concern with issues and questions of moral or political policy, which fall under the province of ethics and legislation.²⁸ In this context, "philosophy" has been defined as "a discipline comprising as its core logic, aesthetics, ethics, metaphysics, and epistemology...the pursuit of wisdom and the search for a general understanding of values and reality by chiefly speculative rather than observational means."²⁹ Clearly, the operative terms used to define "philosophy" are inconsistent and confusing at best, as are the variations in terminology and conceptualizations used to define "jurisprudence." Perhaps an equally as confusing, but substantively more accurate definition of jurisprudence, or "the law", would be based upon principles of human biology, technology, and ecology. They would be used as reference points for discussing some of the more important and influential factors in shaping a Migratory Manifesto, that is, a document leading to an ultimate constitution for spacekind societies and consequent unique civilization(s).³⁰ In the context of the usefulness and/or applicability of existing legal philosophies or jurisprudence, it is interesting to note the observation of Jason A. Shulman in his Introduction to *Isaac Asimov's Book of Science and Nature Quotations* when he mused that "we create nothing ourselves, we simply discover deeper applications of natural laws and make use of them in the presence or absence of wisdom," or sapience.³¹ The objective in relying on these deeper applications of natural laws, or *jus naturale*, is to formulate an implementing jurisprudence that reflects and responds to the differences between

²⁸ *Id.*

²⁹ WEBSTER'S NINTH, *supra* note 2, at 883.

³⁰ For a discussion of the relationship between human biology and expressions of moral behavior, see Josephine F. Wilson, *BIOLOGICAL FOUNDATIONS OF HUMAN BEHAVIOR* (Wadsworth Publishing, 2002); and Richard D. Alexander, *THE BIOLOGY OF MORAL SYSTEMS* (1987).

³¹ ASIMOV, *supra* note 1, at ix.

Earthkind and transhumanistic, *as well as post humanistic*, individuals and societies in space.³²

The traditional definitions and applications of Natural Law theory are to a unique Spacekind jurisprudence as protohominids were to *homo erectus* and now *Homo sapiens sapiens*. In this context, the equally confusing definition of jurisprudence or "the law" referred to above and adopted for purposes of the present discussion asserts that law is the psychoneurophysiological interpretation of external and internal bio-ecological influences and dictates affecting and shaping the motivational characterizations of individual and collective representatives of carbon-based life forms. For *Homo sapiens sapiens*, the law is much like a mirror held up to reflect the ongoing history of civilizations and their component societies, cultures, and biological/biotechnological evolutions. Positive law may be viewed as a biologically based intellectual articulation giving form to prevailing spiritual, humanist, and secular thought processes resulting primarily in value forming activities designed to assist in individual and species survival.

Jurisprudence, in turn, might be said to reflect the course of court decisions regarding a specific issue, or put a bit more pragmatically, it can be said to reflect the analytical methodologies³³ relied on to articulate the inherent underlying values biologically or biotechnologically formulated to assist in assuring the survival of humans and their *humankind* progeny or descendants. However, are individual representatives of the species being enhanced for specific activities, such as long-duration and permanent space habitation, beyond reasonable recognition as component representatives of our traditional taxonomic identification of family, genus, and species? Will such enhancement ultimately lead to the creation of a taxonomically recognized distinct *humankind* species that is unable to respond to jurisprudential regimes of positive laws founded upon prevailing

³² In this context, see Sandra Braman, *Posthuman Law: Information Policy and the Machinics World*, FIRST MONDAY, Dec. 2, 2002, http://firstmonday.org/issues/issue7_12/braman/index.html (last visited June 29, 2006); Sandra Braman, *Threats to the Right to Create: Cultural Policy in the Fourth Stage of the Information Society*, 60 GAZETTE 77 (1998).

³³ Berman, *supra* note 22, at 1651.

definitions of Natural Law? These are some of the relevant issues and questions that must be addressed and revised on an ongoing basis by experts in all secular and humanistic disciplines as new empirical data and enhancement techniques are obtained and developed.

4. What constitutes "human rights"

Inherent in Natural Law theory is expression of what constitutes "human rights" and, presumably, responsibilities simply by virtue of being conceived and/or born. Although various international declarations of human rights and freedoms have been formulated and implemented on the subject,³⁴ the current and evolving status of human biotechnological integration and even virtual reality necessitate constant review and reassessment of what constitutes not only a "right," but even how "human" is defined and for what purposes. Clearly, humanity is at the unnerving point in the evolution of *Homo sapiens sapiens* where humans are beginning to direct their own evolution. And as this happens, the jurisprudential questions relating to bioethics and exactly what is considered "human" begin to haunt societies increasingly in everyday activities. The questions confronting scientists and politicians, alike, are becoming, and will continue to become, just what is "human" and what is a "human right?"

Politics, economics, and other cultural characteristics, whole civilizations on Earth and even ideologies and theologies, are constantly pressing the leading edges of social, educational, and biological change when the catalysts are a vast array of rapidly evolving technologies directed at human bio-cultural transformations.³⁵ Are prevailing international treaties and conven-

³⁴ See, e.g., Universal Declaration of Human Rights, G.A. Res. 217A, U.N. GAOR, 3d Sess., U.N. Doc. A/810 (Dec. 12, 1948); Declaration on the Elimination of all Forms of Discrimination Against Women, G.A. Res. 2263, U.N. GAOR, 22nd Sess., U.N. Doc. A/6555/Corr. 1 (1967); Convention on the Rights of the Child, adopted Nov. 20, 1989, 1577 U.N.T.S. 3; and numerous other conventions and declarations relating to the identification and protection of specific human rights, Office of the High Commissioner for Human Rights, <http://www.unhcr.ch/html/intlinst.htm> (last visited June 29, 2006).

³⁵ See, e.g., *Kitzmiller v. Dover Area School District*, 400 F. Supp. 2d 707 (E.D. Pa. 2005), addressing the teaching of evolution in public school science classes. In this case,

tions, for example, addressing the subject of “global human rights” in any realistic way deriving from and shaped by current scientific methodology and resulting empirical data. One of the clearest battlegrounds between secularism and humanism, between the scientists and certain segments of the human rights activists, involves issues related, for example, to stem cell research. Different conclusions regarding the human viability status of embryos, of stem cells and related research, and of embryonic and fetal viability in the context of abortion, and the like, and as reflected in the laws of different domestic legal systems, may well have an impact on whether rights, as defined or used in various human rights conventions and declarations, have been violated.³⁶ Will Natural Law theory change as the traditional master construct from which human rights derive their validity and characteristics if the essence or very nature of being human becomes blurred as scientific and technological intervention in human biology continues at an extraordinarily accelerating pace? Any change in facts might well lead to alteration of the definition of what traditionally has been considered human nature; and indeed, a reassessment of the genesis of a “right” inherent to all representatives of such an immutable human nature. When it comes to biologically and biotechnologically evolving humankind, can Natural Law theory bend suffi-

the anti-Darwinists denied that they were motivated by religious principles, but rather by a theory of evolution serving as an alternative to the traditional Darwinian view, i.e., they asserted the hypothesis referred to as “Intelligent Design.” *Id.* at 762. In October 2004, the Dover School Board voted 6 to 3 to require students in a ninth grade biology class to hear a disclaimer that Darwin’s theory is just that...a theory and not a fact. *Id.* at 708. The court decided against the Intelligent Design advocates, who urged inclusion of the concept in a biology class, by determining that the concept still embraced “creationism” and not science. *Id.* at 726. See also, Randy Moore, Murray Jensen, & Jay Hatch, *Twenty Questions: What Have the Courts Said About the Teaching of Evolution and Creationism in Public Schools?*, 53(8) BIOSCIENCE (2003); Robert T. Pennock, *INTELLIGENT DESIGN CREATIONISM AND ITS CRITICS: PHILOSOPHICAL, THEOLOGICAL AND SCIENTIFIC PERSPECTIVES* (MIT Press, 2003). For a more integrated technical discussion of the intelligent design controversy, see Leonard Susskind, *THE COSMIC LANDSCAPE: STRING THEORY AND THE ILLUSION OF INTELLIGENT DESIGN* (Little, Brown, 2006).

³⁶ See, Aurora Plomer, *The Law and Ethics of Medical Research: International Bioethics and Human Rights*, MED. L. REV. (2005), in which special attention is paid to the conflicts in the Council of Europe’s Convention on Human Rights and Biomedicine, signed in Oviedo, Spain in 1997, precipitated by advanced forms of biomedical research and applications. *Id.* at 38.

ciently to accommodate what might be considered humankind or transhuman rights? As Einstein remarked, "The mere formulation of a problem is often far more essential than its solution...to raise new questions, new possibilities, to regard old problems from a new angle requires creative imagination and marks real advances in science."³⁷ In short, much study/debate must go into the transitional resolution or answers to these questions. Can the positive law concept of *rebus sic stantibus* (i.e., a "tacit condition said to attach to all treaties that they shall cease to be obligatory as soon as the state of facts and conditions upon which they were founded have substantially changed")³⁸ be applied without invoking a substantive change in Natural Law theory? Hopefully, resolution of these questions and related issues will help avoid the formulation of legal principles that traditionally have encouraged and secured economically, politically, and militarily imperialistic activities leading to establishment of human space colonies.

The earlier proposal encouraged the convening of multidisciplinary experts, such as evolutionary biologists, cultural and physical anthropologists, astrobiologists, space human factors experts, including space psychologists, experts in artificial intelligence, telepresence, teleportation, genetics, economics, philosophy, jurisprudence, etc. The purpose of this multidisciplinary approach is to have these individuals formulate a Migratory Manifesto that identifies, delineates, and defines the rights, duties, and expectations of both Earthkind and members of permanent or long-duration space society habitats who will be interacting with one another during the incipient phases of space migration. Nevertheless, the primary objective remains to create a civilization in space as soon as reasonably possible to avoid the evolution of colonies that, historically, result from imperialistic tendencies leading to political, economic, and military dissensions and conflict.³⁹ Because of this history of Earth cul-

³⁷ EXPLORIT Science Center, http://www.explorit.org/science/quotes_about_science.html (last visited June 30, 2006).

³⁸ BLACK'S, *supra* note 19, at 1432; George Robinson, *Human Rights and Rebus Sic Stantibus*, 2001 COSMOS J. iii-iv (2001).

³⁹ For both general and detailed discussions of evolving military and economic imperialism relating to the exploration and use of near and deep space, see George S. Robin-

tures and civilizations, and in order to sidestep the perils of recidivism, it is imperative not to use and identify with the word "colony" in the context of space migration, occupation, and settlement. It should be noted at this point that, for purposes of this discussion, as well as for the proposed documents contained in Steps Nos. 1 and 2 below, "Earthkind" refers to humans functioning unaltered biophysically in the environment of Earth's surface, its adjacent navigable airspace, and/or temporarily in near space and ultimately out to the limits of the solar system. The word "humankind" (emphasizing the variance indicated by emphasis on *kind*) as it is used herein refers to humans temporarily or transitionally enhanced biotechnologically to survive short- or long-duration in a non-normative or alien physical environment. Appropriate domestic and international jurisdiction will apply for purposes of legal accountability to and by transitioning humankind. The term may be referred to taxonomically in a rather self-explanatory fashion as *Homo sapiens alterios*, and indicates altered and enhanced transitional individual(s) who can function in a biologically or technologically enhanced fashion, both on Earth and in space. "Spacekind" refers specifically to humans and humankind who have been enhanced through some form of significant long-term or permanent bioengineering to survive in near and deep space environments, who are "domiciled"⁴⁰ in space and who may also be sufficiently altered to invoke post humanism characteristics and even speci-

son, *Militarization and the Outer Space Treaty - Time for a Restatement of Space Law*, 16 *ASTRO. & AERO.* 26 (Feb. 1978); George S. Robinson, *Military Systems and the False Images of Space Treaties*, 2 *ARMS CONTROL AND DISARMAMENT IN OUTER SPACE* 2111 (1978); George S. Robinson, *The present and Future of Humankind in Space: No Longer a Sanctuary of Transcendent Principles?*, 27 *ANNALS OF AIR AND SPACE LAW* 527 (2002); George S. Robinson, *Space Law: No Longer a Sanctuary of Transcendent Principles*, 1 *WHITE'S INN CHRON.* 24 (1983); George S. Robinson *Outer Space Treaty and the Great Deception: Civilian Industrialization or Military Outposts in Space?*, in *PROCEEDINGS OF THE AAS/AIAA CONFERENCE* (San Francisco, Calif., 1977).

⁴⁰ These individuals might be referred to for descriptive and explanatory convenience as representatives of *Homo alterios spatialis*. For definitions and distinctions regarding the "coined" terms *Homo sapiens alterios* and *Homo alterios spatialis* as used in the instant textual discussions, see George S. Robinson, *LIVING IN OUTER SPACE* 3 (Washington, D.C.: Public Affairs Press, 1975); George S. Robinson, *Natural Law and a Declaration of Humankind Interdependence - Part I*, 2 *SPACE GOVERNANCE J.* 14 (June 1995); George S. Robinson, *Natural Law and a Declaration of Humankind Interdependence - Part II*, 2 *SPACE GOVERNANCE J.* 32 (Dec. 1995).

ation, e.g., *homo alterios spatialis*. However, before there can even be a justification for a Migratory Manifesto embodying the values and principles giving shape and complexity to the manner in which humanity sends forth its "envoys of mankind"⁴¹ to create space civilizations, humans must first recognize the empirical distinctions between those who remain on Earth and those who serve as humanity's long-duration and permanent space envoys.⁴² That can be accomplished in the form of proposed Step No. 2, or the creation of a transitory "Declaration of Spacekind Independence." The document, below, is offered as a working draft for consideration by the multidisciplinary experts when they do, in fact, convene for the proposed purpose of drafting such a document.⁴³

⁴¹ For treaty reference to astronauts as "envoys of mankind", see Article V of the Outer Space Treaty. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, art. V, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205.

⁴² Presumably, at some subsequent generational juncture, permanent inhabitants of space will no longer serve as envoys of "humanity", but rather as envoys of their own cultures and civilizations unique to their space habitation.

⁴³ In addition to the biocultural Interstellar Golden Rule proposed by Andrew G. Haley, i.e., "do unto others as they would have you do unto them," (Andrew G. Haley, *SPACE LAW AND GOVERNMENT* 395 (New York: Appleton-Century-Crofts, 1963)), the seminal formulation of the principles of space *metalaw* regarding alien intelligence interactions as proposed in 1970 by Austrian Jurist and legal writer, Dr. Ernst Fasan, have some guiding application to the justification for such a Declaration of Independence by Space Migrants and Spacekind. From Dr. Fasan's perspective, these principles of space metalaw include in descending order of importance: (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 an obligated race (perhaps an embarrassingly anachronistic and inappropriate characterization of alien intelligent life forms), (3) all intelligent races of the universe have in principal 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, and (11) to help the other race by one's own activities is not a legal but a basic ethical principle. Ernst Fasan, *RELATIONS WITH ALIEN INTELLIGENCE: THE SCIENTIFIC BASIS OF METALAW* 71-72 (Berlin-Verlag, 1970). For a discussion of these principles in the context of current and evolving metalaw for space activities, see P.M. Sterns, *Metalaw and Relations with Intelligent Beings Revisited*, 20 *SPACE POLY* 123 (2004). See also Robert A. Freitas, Jr., *The Legal Rights of Extraterrestrials*, 97 *ANALOG SCIENCE FICTION/FACT* 56 (Apr. 1997).

Once the proposed second step is taken, it may be assumed that traditional conflicts deriving from unbridled economic, political, and even cultural/religious imperialism leading to values and operating characteristics of colonialism could occur. Therefore, they must be avoided in *humankind* migration to, economic exploitation of, and the ultimate settlement of near and deep space. Recidivism is not acceptable, nor is its inefficiency anything to be tolerated when considering the extraordinary costs to support the migration and settlement of space by *humankind*, to expand the ecotone of *humankind* evolution and *specieskind* survivability. Toward that end, proposed Step No. 3 is a draft treaty for consideration by globally derived multidisciplinary experts convened for review, assessment, conclusions, and formulation of a similar document. The proposed treaty would help establish transitory formal relationships and expectations between and among *Earthkind* and *Spacekind*. The objective would be to help establish a working infrastructure of substantive values and procedures allowing space communities and cultures to evolve characteristics of a unique civilization(s). The formulation of these societal characteristics and underlying values would be undertaken by legally recognized inhabitants/citizens of such civilization(s), and would result in equally as unique and responsive governing constitutions.

PROPOSED STEP NO. 2:
A DECLARATION OF INDEPENDENCE BY SPACE MIGRANTS
AND SPACEKIND⁴⁴

In Representative Assembly of Space Migrants and Spacekind Legally Domiciled in Earth-Orbit and Beyond

⁴⁴ This proposed Declaration is based upon a largely similar declaration drafted by the author and Harold M. White, Jr. See George S. Robinson and Harold M. White, Jr., *Preamble: The Spacekind Declaration of Independence*, ENVOYS OF MANKIND: DECLARATION OF FIRST PRINCIPLES FOR THE GOVERNANCE OF SPACE SOCIETIES, ix, (Smithsonian Institution Press, 1986) [hereinafter Robinson, ENVOYS OF MANKIND], and GEORGE S. ROBINSON & HAROLD M. WHITE, JR., POSTSCRIPT: THE DECLARATION OF SPACEKIND INDEPENDENCE COMPLETED 271 (1989).

Recognizing the distinction between the societal and physical survival requirements, including the biological underpinnings of thought processes, of transitioning humankind and Homo alterios spatialis or Spacekind and those distinguishing characteristics shaped solely or primarily by the environmental influences of being domiciled on, or otherwise inhabiting, Earth's surface;

Believing that long-duration and permanent habitation off-Earth should be characterized by the full expression of the extensive varieties of uniquely space-adapted cultures;

Believing that an accurate understanding of the biological foundations and biotechnologically enhanced characteristics of value-forming processes and consequent conclusions and judgments formed in a synthetic and alien life-support environment of a space habitat will contribute substantially to lessening the potential for destructive forms of competition and violent conflicts between Earthkind and Spacekind, and also between and among those cultures and civilizations remaining on Earth;

Desiring to elevate the evolution of Homo sapiens sapiens to its next biotechnological and cultural stages.

Be it therefore DECLARED:

WHEN IN THE COURSE OF HUMAN AND HUMANKIND EVOLUTION it becomes necessary for envoy progeny to dissolve the cultural and biological bonds which have connected them with their progenitors, and to assume among the evolving communities of the solar system the separate and equal station to which the Laws of Nature entitle them, a decent respect for the opinions of Earthkind requires that such envoy progeny who have transitioned to Spacekind should declare the causes which impelled them to their separation into long-term or permanent space migrants or Spacekind...

...We hold these truths to be self-evident, that Earthkind and Spacekind are created equal to their own respective unique life-support environments, that once having been raised above their biological origins to a recognizable level of sentience and sapience they are endowed with certain inalienable characteristics and requirements for survival and evolution, and among these

characteristics are modes for physical survival, free thought and expression, and the constant evolution of individual and community knowledge. In order to secure these necessary characteristics and requirements, governments are instituted among and for sentient beings, and said governments derive their reasonable and responsive authority and power from the consent of the governed and, by protective inference, from those life forms without the power to communicate interspecies. That whenever any government becomes destructive of these ends, it is the recognized necessity of the governed to alter it appropriately or abolish it, and to institute a new and/or unique set of survival values within a political framework, laying its foundation on such principles and organizing its responsibilities, duties, and authority in such form as to them shall seem most likely to effect their physical safety, community and species survivability, and assure a sense of well-being through acceptance of biotechnological and resulting cultural evolutions. Prudence, indeed, will dictate that political, economic, and ideological traditions long established should not be changed for light and transient causes; and accordingly all experience has shown that Earthkind, and now Spacekind, are more disposed to suffer, while evils are sufferable, than to right themselves by abolishing or radically restructuring the forms to which they are accustomed. But when there occurs a likelihood of a long train of abuses, usurpations, and insensitivity to the needs of existing and future generations surviving and evolving in a unique life-support environment, pursuing invariably the unresponsive policies of economic and socio-cultural dependency, as well as biological and biotechnological parochialisms of Earthkind, it is their right, their obligation, to deny such usurpations, insensitivity, and unresponsive policies and institutions, and to adopt new value standards that will ensure their security from abuses by progenitor cultures and governments of Earthkind. Such has been the sufferance of space community migrants and settlers who are evolving or who are now evolved to Spacekind, and who now of necessity are constrained to begin altering the existing foundations of relationships among Earthkind and Spacekind. The incipient history of governments and private enterprise in space development industries is a continuing history of unfold-

ing injuries, deaths, and usurpations, all having in direct object the maintenance of an absolute tyranny over space communities, their societal characteristics, and individual inhabitants. To prove this, a list of grievances is unnecessary. A candid Earth need only remind itself of the historical patterns of Earthkind when nations have pursued economic, ideological, and religious expansion into less technologically developed continents and societies of Earth. The plea of this declaration is to break the cyclic violence, warfare, and destruction of civilizations which follow with certainty from the establishment of "colonial settlements" without recognizing the unique survival requirements of the community inhabitants. We have petitioned for redress in the most humble terms: Our repeated petitions have been answered only by repeated neglect. We have warned the governments and appropriate controlling interests of Earthkind from time to time of their determined insistence to extend their cultural and unenhanced biological requirements on Earth to space communities and Spacekind functioning in an Earth-alien environment. We have reminded them of the circumstances of our emigration and settlement in space, and those of our predecessors. These warnings and reminders, too, have met with the deafness of prevailing and parochial justice and a failure to recognize the responsibilities of consanguinity and biotechnological ascendancy in succeeding generations of Earthkind. We must, therefore, denounce the causes and acquiesce in the necessity of our separation, and hold them, as we hold the rest of all intelligent species, enemies in war, in peace, friends.

We, therefore, the representatives of space migrants and now Spacekind, as well as space societies evolving into civilizations unique to space existence, appealing to common sense and a secular rectitude of our intentions, do, in the name and by the authority of Spacekind migrating to, as well as those presently settled and living in space communities, declare and publish that these communities and their inhabitants are independent and free to establish their own civilizations deriving from the unique values and survival requirements for biotechnologically enhanced humankind dictated by those unique enhancements and a synthetic and Earth-alien life support environment, and that all political and ideological subservience of Spacekind to

Earthkind is and ought to be totally dissolved; and that as free and independent communities forming a unique civilization(s) of Spacekind, they have full power to protect themselves, establish peaceful relations, contract commercial and defensive alliances, and to do all other acts and things which independent sovereign communities in space, as well as on Earth, may do. And for the support of this declaration, with a firm reliance on the protection offered by a creative intent or other source of directed evolution, whether secular or spiritual, we mutually pledge to each other our lives, our fortunes, and our sacred honor.

PROPOSED STEP NO. 3:

TREATY GOVERNING THE SOCIO-POLITICAL AND ECONOMIC ORDER BETWEEN EARTHKIND AND SPACEKIND ALLOWING FOR THE ULTIMATE DEVELOPMENT OF INDEPENDENT SPACEKIND CIVILIZATION(S)⁴⁶

States Parties to this treaty, encouraged by the increasing global commitment of valuable resources to the advancement of human migration to, and occupation and settlement of, near and deep space, and inspired by the ongoing operational status of the International Space Station and the planning for a global multinational presence on, and permanent settlement of, the Moon and eventually Mars; and

Recognizing the empirical distinctions between value-forming processes of Homo sapiens sapiens functioning in the immediate environment of Earth's surface and adjacent navigable airspace, and those occurring in biotechnologically integrated and enhanced humankind strictly for the purposes of surviving and culturally flourishing in an alien and synthetic life support system of an off-Earth habitat; and

Believing that space exploration and resource exploitation, migration, and settlement of near and deep space by humankind biotechnologically enhanced for evolving into Spacekind and serving as temporary envoys of Earthkind, should be conducted with a recognition and understanding of the breadth of biologi-

⁴⁶ For a partial basis of this proposed treaty, see Robinson, ENVOYS OF MANKIND, *supra* note 44, at 266.

cal and biotechnological variations upon which the cultures both of Earthkind and Spacekind are premised; and

Desiring to contribute to the unfolding knowledge of humankind's values and behavior patterns reflected in the broad spectrum of personal survival requirements and interpersonal relationships encountered while migrating to and settling near and deep space, and transitioning to Homo alterius spatialis or Spacekind; and

Believing that such recognition and understanding of the distinguishing biological and biotechnological underpinnings of evolving humankind and Spacekind activities long-duration and permanently in an off-Earth life support environment will contribute to and help strengthen compatible and positive relations between and among humankind, Earthkind, and Spacekind, and their respective civilizations on Earth; and taking into consideration the principles of Metalaw and the Interstellar Golden Rule; and

Recalling the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, signed at Washington, London, and Moscow on 27 January 1967 and entered into force 10 October 1967; and

Taking into particular account the United Nations Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, in which the special status and survival requirements were addressed regarding humans and humankind living in an outer space environment; and

Being convinced that a treaty governing social order of long-duration and permanent inhabitants of near and deep space will further the purposes and principles essential to the transition of earthbound cultures and civilizations to a civilization(s) in space reflecting personal and cultural biotechnological uniqueness and survival requirements of outer space existence, have agreed to the following rights and responsibilities comprising a Migratory Manifesto: