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# THE ART OF LIVING IN SPACE: INTERNATIONAL LAW AND SETTLEMENT AUTONOMY

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## ABSTRACT

The establishment of permanent settlements in space presents challenging prospects for discovery, exploration, and cooperation. Every nation may participate in this endeavor, either through direct contributions of personnel, materials and technology, or indirectly by cultural, economic and political intercourse. Each of these interrelationships will influence the societal and legal infrastructure of a settlement. Increasingly, autonomy and self-government are being recognized as viable and even preferred modalities for the establishment of settlement legal regimes. Nevertheless, the manner in which the establishment of political city-states in space may be effectuated consistent with international law remains to be determined. This article examines the provisions of international law in general, and space law in particular, which will impact upon the creation of a politically independent space settlement. Recommendations are made for methods in which international law can promote the orderly and successful achievement of this goal.

## INTRODUCTION

The 21st century will present unparalleled prospects for discovery, exploration and cooperation in space. The establishment of permanently inhabited space settlements is one of the best examples of the manner by which these challenges may be met. More than an orbiting research facility, a settlement will be a self sustaining, vibrant community, with an identity and destiny of its own. Many nations will contribute to the establishment and continued functioning of the facility, through the contribution of personnel, expertise and/or materials, and by the conduct of relations. The advances and advantages that will be derived from the activities of the settlement will inure to the benefit of all mankind.

A permanent settlement in space will present unique jurisprudential questions, which may not be answered adequately by the extant *jus gentium*. This study discusses the status of a permanent settlement under current international law, and the necessity for the settlement inhabitants to be granted the right to

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autonomy and self-government. Recommendations are made for the recognition of such capacity by an international agreement formulated for that purpose. Finally, specific elements of the *jus gentium*, in general, and the *corpus juris spatialis*, in particular, are identified, which will need to be addressed in such an international agreement.

## SETTLEMENT AUTONOMY AND INTERNATIONAL LAW

The concept of autonomy and self-government as a preferred modality for permanent settlements in space increasingly has been gaining support.[1] The frontier of space will provide an excellent opportunity for mankind to plan and implement ideals designed to foster the ultimate community. In space, the habitat and entire social structure can be planned, together with the community design, thereby promoting justice and harmony in the interrelationships between the settlement inhabitants and the entities interested in the establishment and operation of the settlement. In this way, the lessons of history can prevent mistakes of the future, as mankind has an opportunity literally to design an entire way of life.

An examination of existing international law reveals that the rights and interests of the settlement population, as a separate and distinct entity, are lacking recognition. Contemporary *corpus juris spatialis* leaves a lacuna regarding the internal organization within a space habitat. Government in the settlement could be established by a limited international convention or agreement, whether bilateral or multilateral in nature,[2] or by adoption of the civil or military municipal law of the founding entity or other interested ens.[3]

Clearly, the founding terrestrial entity, or *fundator terrani*, will presume the authority to control the determination of the law applicable to the internal governance of a settlement. This dominance will extend to every aspect of the facility which the *fundator terrani* deems to be of material significance. The authority of the founding entity to assume the power of control arises, in general, from the commitment of resources necessary to establish the settlement. However, the founding entity need not be a single, sovereign ens. Rather, various combinations of entities may constitute a *fundator terrani*.[4] Thus, the nature of the *fundator terrani* will influence the potential sources of law which may be applied to the settlement.

The application of terrestrial law to a permanently inhabited settlement in space derives from the perspective that an external legal structure will be superimposed upon the facility. However, extant jurisprudential philosophies may prove to be inadequate in the context of a settlement in space, as the national and/or international instrumentalities cannot accommodate all the probable situations which likely will arise and require immediate resolution.[5] Furthermore, the passage of time involved in the process of terran resolution of conflicts would delay unnecessarily the administration of justice within the settlement.[6] It is unrealistic to assume that settlers will accept a situation whereby they do not share in the decision-making mechanisms for the internal functioning of the facility. Manifestly, the determination of applicable law must consider the alternative that a permanent space settlement will have the need for new law, unique unto itself.

The settlement population, viewed as a distinct entity, occupies a preferred position over the *fundator terrani* in evaluating the efficacy of the procedures utilized within the facility. The ramifications of the mechanisms employed will impact upon the various systems and processes employed by the facility, and therefore, constantly will be observed and scrutinized by the inhabitants. The settlement population not only will be affected directly by the mechanisms and procedures utilized for the local government structure, but also will be in the best position to evaluate the effectiveness and equity of the internal functioning of the facility. Adherence to the jurisprudential philosophy of the *fundator terrani* will not promote the legitimate policy concerns of the settlement facility effectively. Recognition of the fact that the collective population of the facility inherently is more capable of conducting administration within the settlement, enables the population to promote its legitimate policy concerns, as well as those of *fundator terrani*.[7] The institutional arrangements available to a potential founding entity, and the population of the settlement, provide unique fora in which new jurisprudential philosophies may be developed.

The settlement will possess a permanent population, a territory which it occupies (in the context of a physical facility, whether located on a celestial body or in outer space), and a form of government, all of which are traditional attributes of a state.[8] Upon the receipt of recognition of its capacity as a legal regime, the settlement will evolve from a mere habitable structure to an *exinde civitas politicae*, a political city-state in space. The continuity of settlement existence, maintained as a primary goal, results by considering the *exinde civitas politicae* like unto another state, with the power to determine its own internal course. In this way, the space entity will be able to embark upon a rational and reasoned existence, and develop its own jurisprudential philosophy, derived from the collective experiences, needs, desires and goals of the inhabitants, rather than have determinations forced upon it in reaction to terrestrial events. Therefore, the space entity should have separate and distinct control over those traditionally local areas of concern which will affect directly the proper functioning of the settlement on a daily basis,[9] and the power to exercise limited home rule in an application of the concept of functional jurisdiction.[10]

The establishment of a settlement in space is an activity of unprecedented proportions, and necessarily will require a close, cooperative relationship between the *fundator terrani* and the *exinde civitas politicae*. The emergence of settlement competence also will require consideration of the relationships between the settlement, the founding entity, and any nation or other ens desiring to conduct relations with, or otherwise interested in the internal functioning of, the *exinde civitas politicae*. These goals may be accomplished by an international agreement of recognition and capacity (IARC), which will grant the settlement exclusive juridical competence for its internal and external functioning. Such an agreement will protect the rights of the settlement inhabitants, as well as define the relationships between the *exinde civitas politicae*, the *fundator terrani*, and other interested ens.

## TERRAN JURISDICTION, CONTROL AND SUPERVISION

A fundamental precept of international law provides that a state retains personal jurisdiction over its nationals wherever such persons physically may be present.[11] This principle has been incorporated into positive space law and expanded by the Outer Space Treaty,[12] which provides, in Article VIII, that the state of registration of a space object shall retain jurisdiction over "any personnel" thereof. The law of outer space obligates states to authorize and supervise the activities of their nationals in space.[13] The personnel of a space object may not necessarily be limited to nationals of the state of registry, however. In such an event, the *corpus juris spatialis* recognizes concurrent jurisdiction in both the state of nationality of the individual and the state of registry of the craft.[14] In addition, the provisions of Article VIII extend concurrent jurisdiction to the launching state, which may or may not be the same entity as the states of registration and/or nationality.

The founding entity or other ens[15] given extended jurisdiction by Article VIII is not in a realistic position to effectively administer the mundane operation of the settlement. While the interests of the *fundator terrani* and the *exinde civitas politicae* may overlap, they will not always be congruent. Conflicts of interest may arise due to divergencies in the growth patterns, policy directions and perceptions of the entities. Furthermore, the exercise of detached control conceivably could change as the amount of capital infusion to the settlement is increased or decreased by the *fundator terrani* or other terran ens. Thus, if the terrestrial ens asserting an interest were to exercise exclusive jurisdiction over the settlement, determinations made and actions thereby undertaken necessarily would reflect changes in policy and perception of such party, manifesting results far removed from the exercise of control.[16] However, the continuity of the space entity need not be dependent upon such detached social and political fluctuation. Furthermore, the resolution of those conflicts will have a significantly greater effect on the settlement community than on the terran ens.

Unrestrained by a declaration of principles or an international agreement granting recognition and capacity to the settlement, any *fundator terrani* could exploit the settlers and their condition to achieve its own economic advantage. Such exploitation would be in total disregard of humanitarian rights, obligations, and responsibilities, as well as the mandates contained in *jus gentium* generally, and the *corpus juris spatialis* in particular. The IARC, therefore, should sanction a modified form of concurrent jurisdiction in the *fundator terrani* and the *exinde civitas politicae*, each with its own rights and obligations toward the space entity

and its individual members. A form of dual citizenship should be recognized by the *exinde civitas politicae* to accommodate those persons who may desire to retain a "genuine link" with a terran state.[17] In the event an individual relocates to a space settlement with the intention of permanently residing therein, the genuine link with his state of nationality is hindered, but not necessarily broken. The application of national jurisdiction, however, may cease to be effective. The collective population of the settlement, comprised of individuals who each possess the intention to reside permanently in the facility, clearly has an interest in providing for the extended well being of each individual within the population. In order to promote the continuity of the *exinde civitas politicae*, the IARC should recognize that settlement autonomy will begin when the first citizens establish permanent residency in the settlement.[18]

A basic premise underlying the concept of planned settlements in space is a rational selection process, whereby the founding entity will act in accord with the desired variety result of skills, interests and educational training.[19] Diversity of races, religions and ethnic heritage should be encouraged as a general policy, in order to enhance social and individual growth within the limited settlement structure.[20] This focused selection process will contribute to the overall capabilities of the settlement and promote harmonious coexistence among the inhabitants. If the selection process were purely self-serving to the founding entity, disharmony among settlers could create political unrest as well as elite factions within the societal structure.[21] The *exinde civitas politicae*, therefore, has an interest in participating in the selection process, together with the *fundator terrani*. The IARC should contain appropriate provisions to promote the rational selection of inhabitants, in the best interests of all concerned entes.[22]

## Rights of Ownership in the Physical Structure

The *corpus juris spatialis* provides that states retain jurisdiction over their "objects" and the component parts thereof in space.[23] If payloads of terran resources are not considered to be component parts of the space object transporting them to space, the completed facility would certainly be considered such an object even though it were assembled in space. The *fundator terrani* will have valid interests in the materials it has provided toward the establishment and construction of the *exinde civitas politicae*. The IARC should articulate principles regarding rights to the facility and compensation therefor, provided that the *exinde civitas politicae* has the unqualified right, at all times, to possess and occupy the entire physical structure. To the extent that the founding entity has obtained an allocation of the three dimensional location of the facility from an international agency,[24] the IARC also should irrevocably assign the same to the *exinde civitas politicae* or otherwise contain appropriate provision for the continuous and uninterrupted peaceful enjoyment and occupation thereof by the settlement.

The settlement may be constructed from a combination of terran and extraterrestrial materials. In addition, a settlement may engage in the manufacture and trade of products utilizing extraterrestrial resources. In either event, the interests of the community of nations must be considered, specifically in regard to the non-appropriation doctrine. Article II of the Outer Space Treaty prohibits national appropriation of outer space, including the Moon and other celestial bodies, by claim of sovereignty, by means of use or occupation, or by any other means. The Moon Treaty expands this prohibition to the surface and subsurface of celestial bodies.[25] However, the establishment of facilities on or below the surface of celestial bodies expressly is permitted by the *corpus juris spatialis*,[26] as is the use of extraterrestrial materials for scientific and other purposes.[27] Moreover, the settlement, as discussed herein, will not derive exclusive benefits from the use of the space resources. Thus, the occupation of a particular, limited location in space or on a celestial body is not, by itself, violative of the non-appropriation doctrine.[28] Accordingly, the right of use and control of a facility built wholly or in part from extraterrestrial resources could be recognized in the IARC, consistent with existing space law.[29]

The second issue relating to the non-appropriation doctrine concerns the settlement's ability to engage in the trade of products manufactured from space resources. The Moon Treaty prohibits any entity from claiming, as its property, the surface or subsurface of celestial bodies or the natural resources thereof *in place*.[30] Therefore, it appears that resources which have been extracted can be used for private purposes.[31] However, celestial resources are declared by the

Moon Treaty to be the common heritage of mankind, and subject to regulation by an international régime which states have undertaken to establish in the future.[32] Nevertheless, the IARC should contain general principles regarding compensation to the *fundator terrani* and *exinde civitas politicae* for the sale of products or services derived from space resources, subject to any extant regulation by an international régime.[33]

The *exinde civitas politicae* also may engage in the commercial trade of products or services that are not derived from space resources. The non-appropriation principle of the *corpus juris spatialis* would not apply to these transactions. Rather, the IARC will recognize that trade of this category will be subject to the international law of trade relations, and the IARC, in this respect, will resemble a general agreement on tariffs and trade or other international convention. The IARC also will need to recognize that a valid unit of exchange will be necessary, which will serve as the basis for the import and export of goods between the settlement and terran entes.[34]

## EQUITY AND CORRECTIVE JUSTICE

A primary area of cooperation between the *fundator terrani* and the *exinde civitas politicae* will concern situations that present requirements which exceed the capabilities of the settlement. Examples of these types of situations may range from the maintenance of life support capabilities, to the care and rehabilitation of persons with severe physical, emotional or psychological difficulties, or potential liability for damages occasioned by the settlement.

### *Essential Services, Supplies and Materials*

The *fundator terrani* will be responsible for the successful establishment of the settlement, and will retain a limited, but continuing, responsibility for the maintenance of the extended functioning of the facility. The IARC must specify that the *fundator terrani* has an obligation to provide the *exinde civitas politicae* with all due aid and assistance required by the settlement. The founding entity or the international community could render the *exinde civitas politicae* helpless by refusing to make needed materials and supplies available. The IARC must prevent such a result by imposing a positive obligation upon the *fundator terrani* to assure an adequate source of necessities for the facility.

### *Expulsion and Extradition*

Adjudication of controversies or disputes within the settlement will be based on the goals of proportionate and distributive justice. Restoration to the *status quo ante* of equilibrium in both the economic and natural moral sense is the only appropriate sanction for the settlement.[35] Both pecuniary penalties and penal incarceration will be inapplicable as they are acts of retribution rather than correction, and neither of these traditional methods would serve to restore equilibrium in a closed and interdependent society. However, where it is determined that an individual is in need of rehabilitation to exist within the bounds of society and achieve his own self-realization, such should be provided.[36] If facilities are not available within the settlement structure, a suitable institution elsewhere will need to be sought. In the event a recipient entity were not otherwise available,[37] the IARC should provide that the *fundator terrani* either accept the individual or locate an entity that will receive such person.

Where an offense is caused by a repetitive offender, or the harm inflicted is severe in nature, the extraordinary remedy of expulsion from the settlement could be imposed. This is the alternative to penal incarceration for the *exinde civitas politicae*. If an individual is unfit for participation in the body politic, and not a proper candidate for rehabilitation, expulsion would be the only practicable means available to isolate the individual from the other settlement members. A formal decision by the settlement to expel a citizen will have the effect of severing the relationship of citizenship with the *exinde civitas politicae*. Expulsion is a severe sanction, and as such, requires ultimate protection of the individuals's rights in order to ensure that the procedures are not applied unjustly. The circumstances which would compel the *exinde civitas politicae* to expel an individual could involve the interest of another ens. A terran state or other space settlement may desire to exercise its own jurisdiction over acts committed within the settlement, by attempting to extradite the individual.[38] The IARC must contain provisions to govern the initiation and processing of extradition requests.

The IARC must provide for at least four separate situations regarding extradition and expulsion. First, under what circumstances may an

interested sovereign request extradition from the *exinde civitas politicae* where the settlement has determined to initiate its own internal procedures. Second, under what circumstances may another sovereign request extradition from the *exinde civitas politicae* where the settlement has declined to adjudicate the circumstances. Third, must the *fundator terrani* accept an individual who the settlement desires to expel, but is unable to do so due to an absence of an available recipient sovereign. Finally, where an individual committed a wrong within or otherwise has caused an event to occur within the settlement facility and then voluntarily absented himself therefrom prior to the completion of the settlement's legal process, the settlement's jurisdiction over an individual will continue, and the *exinde civitas politicae*, under such circumstances, must have the right to request extradition from another sovereign or settlement, for purposes which may include providing testimony or other assistance.

### *Liability*

During the operation and functioning of the economic intercourse between the *exinde civitas politicae* and the international community, questions of liability are likely to arise. In particular, it must be determined whether the *exinde civitas politicae* or the *fundator terrani* will bear primary responsibility for damages. The *exinde civitas politicae* may not have the economic capability to satisfy potential liability for damages. On the other hand, the *fundator terrani* may not be willing to assume liability for the activities of a settlement over which it could exert little, if any control. The Outer Space Treaty provides that states shall bear international responsibility for the activities of their nationals in space.[39] Thus, the IARC should specify that the *exinde civitas politicae* be liable secondarily for damages, with primary responsibility to the international community resting with the *fundator terrani*. The IARC also should specify any rights of indemnification which may exist between the *fundator terrani* and the *exinde civitas politicae*. In appropriate situations, the IARC also may provide for the exclusion, disclaimer or limitation of liability for specific activities or damages.

## CONCLUSION

The creation of an autonomous political city state in space will present novel and unique jurisprudential issues. Existing international law does not necessarily supply adequate and effective answers to these questions, as the rights of the settlement population, as a separate and distinct entity, lack recognition. One manner in which this void may be filled is by an international agreement recognizing the right of the settlement to autonomy, and its capacity for self-government. This study has identified certain specific factors which must be considered in the formulation of such an agreement. While not intended to be exhaustive,[40] the factors discussed illustrate the range of issues which will need to be resolved to achieve the establishment of an *exinde civitas politicae*.

## NOTES

1. *See generally* Cocca, *Human Society on Mars: New Legal Needs for a Different Mankind*, in PROCEEDINGS OF THE 35TH COLLOQUIUM ON THE LAW OF OUTER SPACE ____ (1993), IAF Paper No. IISL-92-0081 (1992); DeSaussure & Ulrich, *Transition of Control and Jurisdiction Over Space Settlements*, in PROCEEDINGS OF THE 34TH COLLOQUIUM ON THE LAW OF OUTER SPACE 55 (1992); G.N. PATTERSON, PRIORITIES IN GEOLUNAR SPACE (1989); G.S. ROBINSON, LIVING IN OUTER SPACE (1975); G.S. ROBINSON & H. WHITE, JR., ENVOYS OF MANKIND (1986); Sterns & Tennen, *Jurisprudential Philosophies of the Art of Living in Space: The Transnational Imperative*, in PROCEEDINGS OF THE 25TH COLLOQUIUM ON THE LAW OF OUTER SPACE 187 (1983); Sterns & Tennen, *Institutional Arrangements: Foundations for Development of Living in Space*, PROCEEDINGS OF THE 24TH COLLOQUIUM ON THE LAW OF OUTER SPACE 225 (1982); Sterns & Tennen, *International Recognition of "The Art Of Living In Space:" The Emergence of Settlement Competence*, in PROCEEDINGS OF THE 22ND COLLOQUIUM ON THE LAW OF OUTER SPACE 221 (1980); Sterns & Tennen, *The "Art of Living in Space:" A Preliminary Study For the Local Government of a Space Community*, in SPACE MANUFACTURING FACILITIES III 533 (J. Grey ed. 1979); Sterns & Tennen, *The "Art of Living in Space:" A Preliminary Study*, in PROCEEDINGS OF THE 21ST COLLOQUIUM ON THE LAW OF OUTER

SPACE 245 (1979); Tamm, *Outer Space Colonization: A Planned Unit Development*, in PROCEEDINGS OF THE 22ND COLLOQUIUM ON THE LAW OF OUTER SPACE 217 (1980).

2. Several different types of international agreement may supply the internal organization of the settlement. A regional ens, such as the European Space Agency, could impose the municipal law of one of the member states. Similarly, the United Nations could establish a settlement to be administered as a U.N. trusteeship. *See* W. JENKS, SPACE LAW 200-02 (1965); *see also* Rebellon-Betancourt, *Legal Aspects of Settlements on the Moon and Mars*, in PROCEEDINGS OF THE 34TH COLLOQUIUM ON THE LAW OF OUTER SPACE 79 (1992); Safavi, *Legal Aspect of Settlement on the Moon and Mars*, in PROCEEDINGS OF THE 34TH COLLOQUIUM ON THE LAW OF OUTER SPACE 85 (1992).

3. *See* Sterns & Tennen, *The Art of Living in Space, A Preliminary Study, supra* note 1, at 249.

4. *See generally* M. MCDOUGAL, H. LASSWELL & I. VLASIC, LAW AND PUBLIC ORDER IN SPACE 99-100 (1964); Galloway, *Conditions for Success of Institutions for International Space Activities,* in PROCEEDINGS OF THE 24TH COLLOQUIUM ON THE LAW OF OUTER SPACE 105 (1982); Sterns & Tennen, *Institutional Arrangements, supra* note 1.

5. *See* Shurley, Natani & Sengel, *Ecopsychiatric Aspects of a First Human Space Colony*, in SPACE MANUFACTURING FACILITIES (SPACE COLONIES) 259 (J. Grey ed. 1977).

6. *Cf.*, Chen, *Pending Issues Before the Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space*, 5 J. SPACE L. 29 (1978).

7. The interest of the founding entity in maintaining internal stability relates primarily to the attainment of the facility's intended purpose. The settlement population would share this interest, but also would be interested in the self-actualization of the individual inhabitants. Thus, the population of the facility is *directly*, and primarily, concerned with the mundane operation of the settlement. The method or procedures by which such stability is maintained must promote personal contentment and satisfaction within the population by the enhancement of relationships within the facility.

8. M.M. WHITEMAN, 1 DIGEST OF INTERNATIONAL LAW 233 (1968).

9. In order to satisfy the needs and requirements of the population, the settlement must be capable of providing certain essential services, including the administration of justice, maintenance of life support functions, including health care, civil protection and fire prevention, and maintenance of the structural integrity of the facility. *See, e.g.*, Carden, *Systems Integration in the Development of Controlled Life Support Systems,* in SPACE MANUFACTURING FACILITIES III 369 (J. Grey ed. 1979); O'Donnell, *Design Opportunities - Zero Gravity Versus One Gravity Environments*, in SPACE MANUFACTURING FACILITIES III 505 (J. Grey ed. 1979); Shuler, *Waste Treatment Options for Use in Closed Systems*, in SPACE MANUFACTURING FACILITIES III 381 (J. Grey ed. 1979). Ancillary support, however, must also be provided, relating to the standard of living of the inhabitants. These ancillary factors include the fostering of the arts, culture and recreation, such as libraries, parks, museums, theaters and other recreational and educational media. *See* Stewart, *Aesthetic Considerations in Bernal Sphere Design,* in SPACE MANUFACTURING FACILITIES III 509 (J. Grey ed. 1979).

10. *See* I.A. CSABAFI, THE CONCEPT OF STATE JURISDICTION IN INTERNATIONAL SPACE LAW 64 (1971); *cf.* AZ. CONST., Art. XIII, § 2 (authorizing home rule).

11. *See* Nottebohm Case (Liechtenstein v. Guatemala), 1955 I.C.J. 4 (Second Phase).

12. 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* January 27, 1967, 18 U.S.T. 2410, T.I.A.S. No. 6347, 610 U.N.T.S. 205 [hereinafter referred to as the "Outer Space Treaty"].

13. *Id.* art. VI.

14. Csabafi, *supra* note 10, at 69.

15. For a discussion of non-state participants in the use of outer space *see generally* Diederiks-Verschoor & Gormley, *The Future Legal Status Of Non-governmental Entities in Outer Space: Private Individuals and Companies as Subjects and Beneficiaries of International Space Law*, 5 J. SPACE L. 125 (1978).

16. *See generally* McDougal, Lasswell, & Vlasic, *supra* note 4, at 99-100.

17. *See* Nottebohm Case (Liechtenstein v. Guatemala), 1955 I.C.J. Rep. 4 (Second Phase).

18. The presence of a permanent population within the settlement does not, by itself, mandate that the jurisprudential philosophy of the *fundator terrani* be abrogated. Rather, a permanent population is merely a condition precedent to the existence of an interest by the inhabitants, as a collective entity, in settlement

autonomy and self-determination. Other factual parameters may exist which demonstrate that the *fundator terrani* is the only ens with a legitimate interest in the internal functioning of the settlement. *See* Sterns & Tennen, *Institutional Arrangements, supra* note 1.

19. *See* Shurley, Natani & Sengel, *supra* note 5, at 261.

20. *See id.* at 264; *but see* Falk, *New Options for Self-Government in Space Habitats*, in SPACE MANUFACTURING FACILITIES II 181, 184 (J. Grey ed. 1977).

21. *See generally* ARISTOTLE, POLITICAE, at Bk. III: Ch. 3 (R. McKeon ed. 1947).

22. Specific allotments or quotas for particular groups of inhabitants need not be articulated in the IARC, as that document should not institutionalize discrimination.

23. Outer Space Treaty, *supra* note 12, at art. VIII.

24. *Cf.* collected articles concerning the World Administrative Radio Conferences in PROCEEDINGS OF THE 29TH COLLOQUIUM ON THE LAW OF OUTER SPACE 103-46 (1987), and PROCEEDINGS OF THE 32ND COLLOQUIUM ON THE LAW OF OUTER SPACE 203-69 (1990).

25. Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, *entered into force* July 11, 1984, art. 11, ¶¶ 2, 3, *text reproduced in* Report, Committee on the Peaceful Uses of Outer Space, 34 U.N. GAOR Supp. (No. 20), U.N. Doc. A/AC.105/L.113 Add 4 (1979); UNITED NATIONS TREATIES ON OUTER SPACE 27 (1984); *and* 18 I.L.M. 1434 (1979) [hereinafter referred to as the "Moon Treaty"].

26. *Id.* at arts. 8; 9; 11, ¶ 3; Outer Space Treaty, *supra* note 12, at art. XII.

27. Moon Treaty, *supra* note 25, at art. 6, ¶ 2.

28. *See* Brooks, *Control and Use of Planetary Resources*, in PROCEEDINGS OF THE 11TH COLLOQUIUM ON THE LAW OF OUTER SPACE 339, 346 (1968).

29. *See* N. PAPADAKIS, THE INTERNATIONAL LEGAL REGIME OF ARTIFICIAL ISLANDS 106 (1977).

30. Moon Treaty, *supra* note 25, at art. 11, ¶ 3.

31. *See* Sterns & Tennen, *Utilization of Extraterrestrial Resources: Law, Science and Policy*, IAF Paper No. IAA-92-0448 (1992).

32. Moon Treaty, *supra* note 25, at art. 11, ¶ 5.

33. The *fundator terrani* may desire to receive a preferential trade relationship with the settlement in exchange for the contribution of labor and materials. However, this 'most favored nation' trade status would be discriminatory, and therefore may violate the common heritage of mankind doctrine. *See id.*, at art. 11, ¶ 1.

34. A system of trade credits or other medium of exchange will need to be implemented within the settlement in order to provide a facile means of expressing preferences.

35. The system of correction is based on the theory of distributive and proportionate justice. In the case of breach in a voluntary transaction, equality is restored as an intermediate between loss and gain. Involuntary losses, however, will be restored in such a way as to return the aggrieved party to the *status quo*, whereby there will be an equality of proportion before and after the transaction. *See* Aristotle, *Ethica Nicomachea*, Bk. V: Ch. 4, § 1132a (W. Ross trans.) in INTRODUCTION TO ARISTOTLE (R. McKeon ed. 1947).

36. *See* PLATO, REPUBLIC, Bk. III: 409e. (A. Bloom ed. 1968).

37. See text & notes 17-18, *supra*.

38. *See generally* C. FENWICK, INTERNATIONAL LAW 388-97 (3d ed. 1965). Extradition is an attribute of sovereignty which may be sought and exercised by a state with a legitimate interest in the return of an individual to its own territory, for the purpose of legal process. Several theories may be utilized to support a claim for extradition. If the actor or victim possessed dual citizenship, the state of nationality could claim jurisdiction on that basis. Another ens, in proper cases, may claim juridical competence by the protective, or impact territoriality principle, or the principle of universality. Under the protective, or impact territoriality principle, a state may exert jurisdiction over extraterritorial conduct which results in consequences within its borders. According to the principle of universality, every state has competence over acts which, by their very nature, affect every other state *qua* state. *See* S. Gorove, *Criminal Jurisdiction in Outer Space*, in SPACE LAW: ITS CHALLENGES AND PROSPECTS 141-43 (1977); McDougal, Lasswell & Vlasic, *supra* note 4, at 694-704.

39. Outer Space Treaty, *supra* note 12, at art. VI; Convention on International Liability for Damages Caused by Space Objects, art. I(c), *opened for signature* March 29, 1972, 24 U.S.T. 2389, T.I.A.S. No. 7762, 961 U.N.T.S. 187.

40. The international agreement of recognition and capacity, in addition to defining the rights and obligations of the settlement and other ens, may

include provisions obligating the *exinde civitas politicae* to comply with standards of conduct based on both positive and customary international law. For example, an autonomous settlement in space should comply with basic humanitarian principles, such as the Declaration of Human Rights, G.A. Res. 217 (III) (A), U.N. Doc. A/810 (1948), and the obligations to render aid to and rescue distressed astronauts contained in the Outer Space Treaty, *supra* note 12, at art. V, and the Agreement on the Rescue of Astronauts, the Astronauts, and the Return of Objects Launched into Outer Space, *opened for signature* April 22, 1968, 19 U.S.T. 7570, T.I.A.S. No. 6599, 672 U.N.T.S. 119. A complete discussion of such further provisions of international law which might be applicable is beyond the scope of this study.