THE IMPACT OF TECHNOLOGICAL REVOLUTION

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The industrial and technological revolutions that began roughly with the invention of the steam engine and have gone on with accelerated speed ever since, have fundamentally changed the character and resources of the societies affected by it. They by now, embrace virtually the entire human community. Their impact in the sphere of property relations has been multi dimensional. First the objects of those relations viz. property reasources have risen several-fold. The Organisational tools for exploiting them have again changed, and we have new instrumentalities for this purpose in the form of huge and impersonal corporations and business empires. The nature of property relations has also suffered a sea-change. Ownership is increasingly divorced from power and managerial control, and we have the curious spectacle of a small managerial or directorial elite of vast corporations or industrial complexes wielding extensive powers and controlling the economy in both capitalist America and Communist Russia, the difference being only in these corporations and complexes being in the private sector in America and the public sector in Russia.

This divorce between ownership and control of wealth in the U.S. has been extensively studied by Berle and other writers.[1] It has been stated:

> Our productive wealth is owned by corporations that are beginning to be owned by other corporations ... The connection between the individual and property has been severed by the progressive transfer of the titles of ownership to productive property from individuals to large institutions. The instrumentalities of the property system (the concept of title, ownerships, interest, Aonds, shares, etc.,) have thus been used to set up a new disposition of power over capital wealth. Those who now exercise it, do so not because they are owners, but because they occupy certain institutional positions as heads of corporations, financial trustees, labour leaders, and governmental officials.[2]

Another striking feature of the U.S. economy is the increasing governmental assistance to, and participation in, corporate enterprise. Berle has stated:

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1. See, Berle and Means, *The Modern Corporation and Private Property* (1944) and W. Friedmann, *Law in a Changing Society*, (1959) chapter 3 on "Property."

2. Paul P. Harbercht, S.J., 'The Modern Corporation Revisited", (1964) *Columbia Law Review*, 1410. 1414.

> Literally enormous quantities of technical information have been accumulated by government and thrust into fields of non-statist enterprise .... early two thirds of all technical research is new financed by the federal government. Though a great number of modern industries one thinks at once of electronics, or aviation and of space satellite communication—the government-financed technique enters the process of corporate explosion. By no stretch of imagination can it be described as property primarily created by private enterprise. Like it or not, these assets are social and statist in origin.[3]

It may be noted in this connection that the corporation set up to develop and operate the communications satellite system in America is "owned one half by the federal government and one-half by private enterprise" and that "the American state is an investor in practically every substantial enterprise."[4] Under this combined process of corporate control and management of enterprises and governmental assistance in the field of technological research as well as participation in these enterprises, the total productivity in America by 1980 is expected to double (approximately 1.2 billion of 1960 dollars) and personally received income is expected to reach one trillion dollars.[5]

The European communist countries have equally realised the importance of creating a technically competent managerial cadre to man their industries and the futility of the stress on more ideological reliability of these managers. It has been stated that "American ideas and technique" relating to management education "are now being transferred" to these countries and "new departments of industrial management have been established at several technical colleges in Russia."[6] The erection of the Berlin wall, while undoubtedly constituting a serious violation of human rights, has arrested the "brain drain" to the West and East Germany has now surged ahead in industrialisation.

Thus by a proper utilisation of scientific research and management techniques, both the capitalist and the communist countries of the West seem to have reaped the full benefits of the technological revolution. This revolution seems to have renderd political idologies largely irrelevant for augmentation of the economic power of the state. In any event, the course

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3. Adolph A. Berle, "Property, Production and Revolution" (1965) *Columbia Law Review*, 1, 6. It should also be noted that in return," the federal government presently taxes corporate profits above 25,000 dollars at the rate of fifty per cent", thus 'virtually making the state an equal partner as far as profits are concerned." *Id.* at 9.

4. *Id.* at 8 and 9.

5. *Id.* at 20.

6. See article on 'Reform of Managerial Cadre in E. Europe", *The Hindu*, Dec. 7, 1966.

of the revolution has led to similar developments (viz., increase in governmental initiative, the rise to power of scientific and "unpersonal" managerial elites and the adoption of same management techniques) and also to similar results viz., a vast increase in the pool of resources available for the community, which inevitably percolate for the benefit of all citizens, leading to a rapidly rising standard of living. The have-nots may well become an object of history in these countries. While the communist countries have thus been able to overcome a so far notorious shortcoming in their systems and to satisfy the demand for consumer goods on the part of their citizens, the capitalist states too have adopted the philosophy of a welfare state and have taken steps to eliminate the pockets of poverty in their countries. The traditional tension in property relations between the haves and the have-nots has well-nigh been eliminated as a result of the technological revolution in these countries.

Technology has had an equally curcial role in the distribution of the power-balance between nations. Morgenthau has graphically pointed out:

> Not only the superpowers but also nations of the second or third rank, such as China, France, Israel and Egypt, are engaged in a frantic competition for scientific and technological advantage, and success in that competition depends upon the quality of the scientific elites. The German scientists who are working for the Egyptian government are the most important single factor bearing upon the distribution of military power in the Middle East.[7]

I do not know whether the ommission of India in the above list of "nations of the second or third rank" was deliberate. But the backward nations of Asia, and Africa including India and China, do not seem to have adequately understood the lesson of the technological revolution in the capitalist as well as the communist countries of the West, viz., the necessity of developing a hard core of managerial scientific elite to lead the industrial advance of their countries. In countries like India, the role of the traditional divisive groups based on caste, community or tribe (in African countries) seems to have become accentuated instead of being diminished, after attainment of independence.

The ruthless competition for political and economic power between these groups has dimmed the prospects of the rise of a technological meritocracy, so essential for the economic advance of these countries. And the charismatic character of their societies has led only to the strengthening of the personality cult. The inflated importance attached to the politician and the administrator has also hampered the growth of a vigorous scientific and managerial elite. This trend has become most pronounced in

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7. Hans J. Morgenthau, "Modern Science and Political Power," *Columbia Law Review,* (1964), 1386, 1394.

communist China, where the dread of intellectuals on the part of the ruling clique has become so acute as to lead to the whole-sale exile of the staff of academic institutions to the villages for "re-education", and the Red Guards have launched a crusade against these alleged bourgeois remanants. Rigid ideological dogmas and sham political slogans of socialism have served merely as cloaks of progressivism behind which traditional caste groups or the ruling cliques in these countries have ruthlessly carried on their pursuit after power. The prospects of either re-ordering the property relations by augmenting the economic resources of these poor countries or of reducing their military weakness will not brighten, so long as their sectarian values are not replaced by a pervasive scientific ethos.

We may next consider the implications of the conquest of the sea, air and space in relation to the existing scheme of property relations. Technology has vastly expanded man's capacities of exploiting the resources of the high seas and their sub-soil and sea-beds, with consequent impact on the traditional notions of international law. Till recently the importance of the high seas lay mainly in their serving as the highway for communication and commerce between nations, and fisheries remained the major exploitable resources of the seas. This led to the adoption of the concept of the freedom of the high seas and the drawing of a narrow belt of territorial waters for exclusive fishing and other rights of the coastal state, which too were subject to the right of innocent passage by ships of third states. The Roman lawyer treated the sea as an example *par excellence* of *res omnium communes*, as things commonly owned by all human beings and thus incapable of being owned or appropriated by any particular person. However, as O'Connell rightly points out, "they were thinking of course in terms of appropriation by private persons, and the problem of appropriation by the State could not have occurred within the context of the Roman empire."[8] While modern international law thus forbids appropriation of the high seas by states, exceptionally, it has recognised the rights of appropriating the sea-bed by driving mine-shafts or tunnels therein from the coast, as in the case of the mines in Cornwall, or exploiting the sedentary sea-fisheries on the sea-bed in the high seas as in the case of the chank and pearl-fisheries in the Palk straits.[9] However, the theoretical basis of such recognition has been a matter of controversy. Thus Colombos defends the right of states to occupy a limited portion of the sea-bed, "on grounds based on historical and prescriptive considerations."[10] Vattel justified it as based on "immemorial user" and

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8. D.P. O'Connell, *International Law*, 524 (1965).
9. See Colombos, *The International Law* of the Sea, 61-63, (4th ed. 1961).
10. *Id.* at 61.

"uninterrupted and undisputed proprietorship."[11] Australia has also claimed that the sea-bed containing these sedentary fisheries beneth the high seas "could be regarded as th subjct of occupation and property."[12] But it may sound illogical to claim property in an area which is not subject to the 'sovereignty' of any country. In fact, in *Annakumaru Pallai* v. *Muthupayal*[13] the contention was raised that chank fish from the chank bed in Palk's Bay (between India and Ceylon) could not be object of theft, because the sea-bed could not be owned by anybody. The court, however, rejected the claim on two grounds. First, the sea-bed in the Bay was effectively occupied by the Crown, with the acquiescence of other nations. Secondly, considering the configuration of Palk's Bay, which was at that time "land-locked by His Majesty's dominions (i.e. India and Ceylon) for eight-ninth of its circumference", it was of the view that the Bay was not part of the high seas, but an integral part of His Majesty's Dominions, the portions adjacent to India, being within the jurisdiction of the Indian authorities.[14] O'Connell is critical of applying the concept of prescription to the regime of the sea, on the ground that "it is difficult to perceive how there can be prescriptive rights to either a *res mulluis* or a *res communis*."[15] He concludes that "prescription, and the antiquity of the interest, appear to be irrelevant to the discussion and occupation is left as the most satisfactory explanation of the existing claims to the sea-bed."[16]

The concept of occupation is presumably based on the notion that the high seas and sea-bed are *res nullius*. The difficulty in such a notion

11. D. P. O'Connell, *op. cit.*, note 8, 570.

12. One state may own property in another state with the latter's consent or acquiescence. It may similarly asset property rights over objects belonging to it and sent to a place which is not subject to its own or others' sovereignty, (e.g.) over its satellites orbiting in outer space. But it would seem theoretically difficult to claim property, which is after all a right based on and derived from sovereignty, over an area, without claiming sovereignty over it also. Of course, proprietory rights can be claimed on the sedentary fisheries or other resources in the sea-bed after they are removed from it just as property can beclaimed over fish caught from the high seas. But the submission is that no such can be claimed over the sea-bed without asserting sovereignty over it.

13. I.L.R. 28 Mad. 551.

14. In *A.M.S.S.V.M. and Co.* v. *The State of Madras* 1953 (2) M.L.J. 587 this view was wrongly reiterated by the Madras High Court, ignoring the fact that after 1947, India and Ceylon have become independent nations and hence the Palk's Bay could no longer be considered inland waters. See, for a criticism of this case, M. K. Nawaz, "summary of Public International Law cases," vol. II, *Indian Year Book of International Affairs,* 351, and T. S. Rama Rao, "Some Problems of International Law in India," 1957, *Indian Year Book of International Affairs,* 31, 15 and 17.

15. O'Connell op cit., note 8, 570.

16. *Id.* at 571.

is that the high seas would then be susceptible of being owned by any state, and "the whole history of the past three hundred years is against such a conclusion", as pointed out by Colombos.[17] But Colombos rejects the doctrine that the high seas are *res communes* on the untenable ground that "community of ownership means the possibility of partition and so of separate ownership."[18] There seems to no insuperable juristic objection to recognition of co-ownership without the right of partition. Anyhow, the concept of *res communis* is more comprehensivs than that of co-ownership and would seem by itself to exclude the possibility of partition. It is therefore suggested that the view that the seas and these a bed are *res communes* is the most suitable one. In that event unilateral appropriation of a part of them by states is not permissible. The exception cases of the occupation of the sea-bed in Palk's strait and also, as we shall see, of the continental shelf and claims to sovereignty to them, can then be justified only on the basis of a general recognition by the other states through the mode of express consent or tacit acquieseence to such claims. An object which is *res communis* may cease to be such and become capable of appropriation by a state by common consent, and, in fact, can become such only by common consent. It has, however, to be noted that states in making claims to isolated sedentary-fisheries or to the continental shelf, have invariably asserted unilateral claims and not sought any general recognition. But these claims have mostly been accepted by other states, and where excessive claims to a portion of the high seas have been (e.g.) by some Latin American States claiming a territorial belt of 200 miles, other states have refused to recognise them. Hence on balance the view that the high seas, the sea-bed and th subsoil of the seas are *res communes* and not *res nullius* would seem to command the support of state practce.[19]

Regarding exploitation of fishing resources, a modern writer has pointed out:

> The recent technical progress in the construction of fishing craft has made it possible for fishermen to engage in pelagic fishing far from their bases without concern over weather conditions and improvements in gear and methods of fishing have increased the total catch. Modern equipment for the preservation of fish e.g. canning and refrigeration, have permitted the introduction in canned and fresh fish into existing and newly developed markets on an unprecedented seale. The belief that the resources of the sea are inexhaustibl, and its corolary notion, that their exploitation should be unregulated, is no longer supported by the facts.[20]

17. Colombos, *op cit.*, note 9, 60.

18. *Id.* He therefore takes the view that "the legal position of the high sea is based on the conception that it is common and open to all nations."

19. However, some novel doctrinal aspects have arisen in relation to the continental shelf, which are considered below.

20. Shigeru Oda, *International Control of Sea Resources,* 56 (1963).

States have now entered into several international conventions for conservation and regulation of marine resources.

A significant recent development in the Law of the Sea is the assertion of sovereignty by several states over the contimental shelf adjoining their coasts with a view to exploit the natural resources therein, principally oil, as submarine oil-bearing strata are to be found in the contimental shelf. The shelf is "the under-sea extension of the continental territory, normally upto a depth of one hundred fathoms, at which point the sea-bed begins to fall steeply off towards the oceanic basin."[21] Oil is pumped out of this area by means of oil-derricks erected on the sea-bed, and projecting above the water level and thus causing some obstruction to free navigation. Claims over the shelf have been asserted by several states, beginning pehaps with the U.S. which by the famous proclamation of President Truman of September 28, 1945, declared "the natural resources of the sub-soil and sea-bed of the continental shelf" to be "appertaining to the United States and subject to its jurisdiction and control." Subsequent proclamations made by other states including India[22] have been more explicit their assertion of sovereignty over the continental shelf. This claim of sovereignty has also been recognised though restricted to the purpose of exploiting these resources, in article 2 of the Geneva Convention on the Continental Shelf of 1958, which provides as follows:-

> Article 2:— 1. The coastal state exercised over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources.
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> 2. The rights referred to in paragraph 1 of this article are exclusive in the sense that if the coastal state does not explore the continental shelf or exploit its natural resources, no one may undertake these activities, or make a claim to the continental shelf, without the express consent of the coastal state.
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> 3. The rights of the coastal state over the continental shelf do not depend on occupation, effective or notional, or on any express proclamation.

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21. Colombos, *op cit.*, note 9, 63.

22. The President of India issued a Proclamation on 30th August 1955 stating that "India has and always had full and exclusive right over the sea-bed and sub-soil of the continental shelf adjoining its territory and beyond its territorial waters." Article 297 of the Indian Constitution has been amended so as to include the continental shelf also by the constitution (fifteenth amendment) Bill, 1962 and it now provides that "all lands, minerals and other things of value underlying the ocean within the territorial waters or the continental shelf of India shall vest in India and be held for the purposes of the Union." See T. S. Rama Rao, *op cit.*, at 12, and P. Chandrasekhara Rao, "The continental shelf—The Practice and Policy of India." (1963) *Indian Journal of International Law*, 191.

The proclamations issued by several states also declare an already existing sovereignty over the shelf. Thus the Indian Proclamation, quoted in foot-note 22, states that India has, *and always* had "full and exclusive rights over the continental shelf."

The novel claims raise some interesting theoretical issues about their legal basis. Prescription or occupation cannot be treated as the basis, in view of the facts that the rights are declared to have always existed, that effective and exclusive occupation of the entire shelf is not possible," given the present development of tchnology"[23] and that presumably for this reason the Convention excludes the necessity of any type of occupation, and even of notional occupation. One view based the right of exploitation of the resources in the continental shelf on article 39(1)(c) of the Statute of the Intenational Court of Justice, as being "a general principle of law recognised by civilised nations."[24] Another view treats it as one of customary international law, in view of the number of states who have asserted the right and the absence of protest on the part of others.[25] However, O'Connell and Oda are seeptical of the value of lack of protest, in view of the lack of "sufficient economic interest" in any state necessiating a protest.[25] Prof. O'Connell endorses the view of the International Law Commission that "the continental shelf doctrine is a generic one independent of prescription, historic right, or occupation."[26] He further argues that "economic necessity, which the International Court in the *Anglo-Norwegian Fisheries* case allowed full play, is the generating ismpulse, and contiguity is relied on as "the test for establishing the limits within which economic considerations will be permitted to operate."[27] The factual assertion of sovereignty by a large number of states and the necessity of law "to provide a satisfactory basis for a reconciliated of conflicting claims," lead him to accept the view that such sovereignty is to be altributed ipse jure to the littoral state, and that too from time immemorial. This of course amounts to saying that too with retrospective effect, (what they always had such sovereignty, as the Indian proclamation asserts), they

23. Shigeru Oda, *op cit.*, note 20, 152.

24. *Id.*, at 153.

25. O'Connell, *op. cit,* note, 577 and Oda. *Id.* at 153.

26. O'Connell, *Ibid.*

27. *Ibid.*, 577 and 578. It may be noted that as recently as 1951, the arbitrator in the *Abu Dhabi* arbitration found that the doctrine of the continental shelf presented an appearance of 'ragged ends and unfilled blanks", and treated it as "tentative and declaratory." Hhe denied that the continental shelf formed part of the territory of the Shiekh of Abu Dhabi in 1931, and hence was part of the territory covered by an oil concencession given by the Sheikh to a British Company in the "territo y of his state. *International Law Reports* case No. 37.

must be deemed in law to have and to have such sovereignty. But states being the subjects as well as makers of International Law should logically be conceded the capacity to mould it as they like and change its content with retrospective effect, provided there is *consensus ad idem* among them on this issue. This is no way affects the validity of the proposition put forward earlier that the high seas and the sea-bed are *res communes,* as the change in the law that has occurred now can be stated as being that a portion of the sea-bed contiguous to the coasts of states has ceased to be *res communes* by the *common consent* of the states.

The continental shelf regime time has one disturbing implication, to which critical reference has been made by Shigueru Oda,[28] viz., the fact that in view of the erection of huge derricks on the high seas, and the necessity of cordening off the areas around it for security considerations, the coastal state necessarily has to exercise exclusive jurisdiction over the superjacant waters also, and this does affect the established principle of the freedom of the seas.

Lastly it may be noted that the Geneva Convention includes among the natural resources of the continental shelf open to exploitation by sates, not only minerals and non-living resources but also sedentary fisheries which, "at the harvestable stage either are immobile on the sea-bed or are unable to move except in constant physical contact with the sea-bed or sub-soil.'[29]

Regarding air-space, it is a well settled principle of International law that a state has sovereignty over the superjacent air-space. However, in view of the absence of exploitable resources in the air, the law of air impinges little on property relations as such.

The recent launching by Soviet Russia and the U.S. of artificial satellites of various types has given as impetus to the development of the law of outer space and possibly of even celestial bodies, and law may soon have to provide for adequate regulation of property relations in outer space and clestial bodeis, though the the chances of exploiting the resources therein seem to be remote, with the possible exception of those in the Moon. The possibility of collisions between setellites or space stations, and of carrying out harmful experiments in outer space, and the need for preventing threats of nuclear attacks from artificial satellites raise questions of state responsibility and attempts have been made to meet such new

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28. Oda, *op cit.*, note 20, 156-157.
29. Article 2 of the Geneva Convention on the Continental Shelf.

challenges. Before these problems ar tackled, one has to face the initial question of the legal status of outer space and celestial bodies and of whether International Law applies at all in outer space and if so, what areas of it apply therein.

The concern of states on these problems has found expression in a number of resolutions passed by the U.N. General Assembly, the most important of which is the Resolution of 1962 (XVIII) entitled "Declaration of Legal Principles Governing the Activities of states in the Exploration and use of Outer Space." General Assembly resolutions are not legally binding, but the specific acceptance of the principles in this resolution by the two space powers and the unanimity with which it was passed have led to the view that these principles are well on the way to becoming principles of customary law, if they have not already so become[30] Principles 2 and 3 enunciated in this Resolution are: "2. Outer space and celestial bodies are free for exploration and use by all states on a basis of equality and in accordance with international law. 3. Outer space and celestical modies are not subject to national appropriation by claim of sovereignty, by means of use or occupation or by any other means."

Since, according to this Resolution, international law applies to outer space and celestical bodies and they are not subject to national appropriation, it would seem that they are *res omium communies.* Bin Cheng however, feels that they should be classified as *res extra commercium* and not *res omnium communes,* as according to him, one state may veto the activities of another state in outer space, if there is joint dominium therein, i.e. if it is treated as *res omnium communes.*[31] He cites two speeches by the Rumanian and the Czechoslovak delegates in the U.N. debates, in support of this view. However, this seems to be a mistake about the nature

30. See (e.g.) the view of C. W. Jenks, in "Space Law Becomes a Reality" in Current Problems in Space Law, p. 15, pp. 16 and 20 Bin Cheng denies its binding character, and argues that if the "principles" enunerated therein are adhered to and upheld by the members of the U.N. They may become rules of International customary law. Bin Cheng, "The Extra-Territorial Application of International Law," (1965) *Current Legal Problems,* 132, 151. Zemanek treats the principles enunciated therein as "general principles of law" within the menaing of article 38(1)(c) of the Statue of the International Court as they have been "recognised" by the member states of the U.N. Zemanek, "The United Nations and the Law of Outer Space". (1965) *Year Book of World Affairs,* 199, 208-9. But this view seems to place undue reliance on the accidental enunication of certain" principles in the resolution. Besides, it is doubtful whether article 38(1)(c) covers anything more than well known juristic principles and axious adumbrated in different legal systems; certainly, it would not seem to encompass detailed and specific norms, as those embodied in the U.N. Resolution.

31. Bin Cheng, *op. cit.,* note 30, 143-44.

of *res omnium communes* similar to that which Colombos notes earlier[32] and it would seem more appropriate to deduce the contrary view that in case of joint ownership, all co-owners are entitled to exercise rights of ownership and one co-owner *cannot* veto the acts of another. Besides, he ignores the fact that in Roman law, which has enunciated these concepts, *res communes* is only a species of *Res Extra Commercium* or *Res Extra nostrum patrimonium* (things which cannot be owned by anybody), which consists, besides, of *res publicae, res universitatis* and *res nullus* and is thus not distinct from it.

I would suggest that for purposes of modern international law, it would be appropriate to recognise two forms of *res extra commercium* i.e. things which are capable of being owned or physically appropriated, but whose ownership or appropriation is forbidden by law, and things which cannot by their very nature be appropriated by human beings. The Sun and the distant stars would seem to belong to the latter category, while the moon, to the former, as it may be possible for man to occupy the moon in the near future. I would designate the first as optional or relative *res extra commercium,* and the second as absolute *res extra commercium.*

Interesting legal questions may arise if a space power seeks to appropriate the Moon in course of time, in contravention of the above U.N. Resolution, pleading that it (the Resolution) has no legal force. It may assert that the moon is *res nullius* and that it has become its sovereign by occupation. The other states may argue that the moon is *res omnium commnues* and is incapable of occupaion, and that at any rate recognition by other states is essential. In the absence of a consensus among nations on the applicability of either international law as such, or of the particular rules of international law to be applied, it would seem that the principle of effectiveness will prevail.

The question next arises whether the resources in outer space and celestial bodies may be exploited by any state, endowed withe adequate scientific equipment in course of time. Dr. Jenks answers the question in the affirmative, as the U.N. Resolution forbids "national appropriation" of them as such and not of their resources.[33] This seems legitimate, as though the high seas are *res omnium communes* international law does forbid exploitation of its resources. But Dr. Jenks pleads that "any exploitation of such resources which may be possible should be on the basis of concessions, lease or licences from the United Nation."[34] One wonders, however, whether ,the space powers which become capable in course

32. *Supra* note 9 at 6.

33. C. W. Jenks, *Common Law of Mankind* 24 (1958).

34. *Id.* 398. Also Ibid.

of time of exploiting these resources will surrender them to the U.N. if they are found valuable.

The Soviet Union sought in 1962 the approval of the U.N. to the principle that "all activities of any kind pertaining to the exploration and use of outer space shall be carried out solely and exclusively by states."[35] This was, however, not assented to by the U.N. in view of the opposition to it by the U.S., which has in fact provided for the creation of a private corporation, with its stocks partly purchased by the members of the public, to operate the Commercial Communications Satellite System.[36] The General Assembly Resolution, noted above, has given tacit approval to this by providing merely for "international responsibility" and "authorisation and continuing supervision" by the state concerned, for the activities of such private bodies. The Resolution also provides for prior consultation of other states, before conduct of potentially harmful space activities or experiments that may affect them. Similarly the rights of the state owning a space object to recover it or its component parts which may be found in other states, and its liability for damage to a foreign state, or to its natural or juridical persons caused by the launching of its space objects, are provided for. Lastly, astronauts are declared as "envoys of mankind in outer space," and the obligation to return them to the state of registry of their space vehicle is imposed on states in whose territory they may land in an emergency or due to an accident. Thus international law as well as the laws of property, torts and contracts may acquire a new dimension but are hardly likely to alter their content, when man soars up in his voyage into distant space in the not too distant future.

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35. See Maxwall Cohen, Ed., *Law and Politics in Space,* 31 (1964).

36. Prof. W. Friedmann has criticised this policy on the ground that "it may involve the U.S. in irrevocable conflict with the other major states," in view of the "political and potentially military character" of the operations, in his book, *The Changing Structure of International Law,* 29 (1964).