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IN QUEST OF A NEW WORLD ORDER: A WORLD ORGANIZATION MODELED AFTER THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA).

THE UNIVERSITY OF OKLAHOMA, PH.D., 1979

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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

IN QUEST OF A NEW WORLD ORDER: A WORLD ORGANIZATION MODELED AFTER THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

A DISSERTATION

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in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

By

CHARLES ERHARDT MEHRING

Norman, Oklahoma

1979

IN QUEST OF A NEW WORLD ORDER: A WORLD ORGANIZATION MODELED AFTER THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

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The author dedicates this study to the world, to the future, and to that most elusive of all human dreams, World Peace and Prosperity.

C. E. M.

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CHAPTER I

INTRODUCTION

As worldwide conflicts between nations continue and new disputes threaten to erupt into violence around the world, the need for an international peacekeeping system easily suggests itself. The world is constantly shrinking in terms of communication speed and physical access. An increasingly overpopulated world has come to be dominated by two superpowers, the United States and the Soviet Union. A new class of neutralist, formerly colonial, states -- the so-called Third World nations -- occupies an increasingly significant position on the world stage. The various "outlying" parts of the world are becoming independent and dynamic, with their own personalities, aspirations, and interests. All of these elements combine to mandate a new look at the world.

It is increasingly evident that war as a means of solving national conflicts must be eliminated, if for no other reason than because it raises the specter of mutually assured atomic annihilation. The new closeness of nations and the interdependence of their economic, political, and

social systems demands greater cooperation among them than they have heretofore exhibited. The glaring inequalities between the "haves" and the "have-nots" begs for solution through international cooperation. In terms of consequences, it seems that a little bit of exploitation in modern times goes much further than it formerly did. For example, the policies of a few OPEC nations can have economically traumatic, worldwide impact. Similarly, the dumping of goods by one nation into the economy of another can have disastrous results on that economy.

Historical Trends

Historical analysis of human society shows a definite trend. Individual families first fended for themselves in a hostile natural environment that included both wild beasts and other human beings. They then formed villages from which the more advanced city-states, such as those of ancient Greece, gradually evolved. These coalesced into small states that included many individual cities. Feudalism prevented the formation of larger states until powerful kings and the growth of trade both provided an impetus for the formation of larger national units. Sovereign states and kings then came on the scene, with expansionism often running rampant, motivated by greed and accomplished through conquest. The next step was an empire consisting of federated nation-states. Empires were often inclined toward the impersonal and inhuman treatment of

"lesser" races, and frequently waged wars on a near-global scale. Two world wars were eventually fought, with World War II followed by a "cold war," involving virtual bipolarization of the nations of the earth.

World War I and World War II resulted in rather frail models of world government in the form of the League of Nations and the United Nations, respectively. Neither of these organizations ever produced genuine world peace. World War I, said to be the war to end all wars, was shortly followed by an even more devastating conflict, World War II.

There is a lesson that can be extracted from this capsule history: namely, the need for a world order established and maintained by an effective world organization.

Obstacles to World Order

Nationalism and patriotism are commonly cited obstacles to world government. A strict nationalism, one that is isolationist and narrow-minded, is a major cause of wars. A lessening of self-glorification by the autonomous states is required before a united world can come about. Yet, there must be a balance between national and global forces, since both are unalterable parts of human nature. History manifests an irreversible trend toward increasingly larger units of government. In view of the existing conditions, genuine world government is now an absolute necessity.

Some theorists argue that human nature will simply not tolerate nations yielding their sovereignty. Individual greed and innately evil human nature are cited as the underlying conditions causing despotic states to impose their wills on less belligerent nations.

The basic premise of education is that human nature can be influenced. Therefore, it will be necessary to mold people's thinking in order to overcome their cultural bias while at the same time allowing them to retain their cultural heritage, within the umbrella of a stable world order.

Others point to various environmental influences, and to "inevitable" historical forces. These can work in a variety of directions. For example, since World War II, Europe has registered considerable advances in national cooperation. By contrast, the ancient Roman Empire perished because it failed to adjust to the need for such cooperation. The sheer dynamics of the world process are propelling nations in the direction of world cooperation, rather than away from it.

Nationalism must be recognized for what it is, an obstacle to worldwide human cooperation. A free flow of the human intellect in a cooperative scheme based on a world without borders, without fences, is now a sine qua non. Nationalism is a powerful force, somewhat like the current of a river which can, however, be diverted to constructive

use. The potentially destructive force of nationalism can be redirected into useful channels on the international scene, with the cultivation of understanding and cooperation forming the basis of a united world. Loyalty to the national state must be converted into a world loyalty, to bring about a strong and lasting condition of peaceful coexistence.

Power elites cause wars because of their inability to get along with each other. Autonomy, sovereignty, power, and national interest engender an absence of morals and ethics among nations. From such a standpoint, Hobbes' Leviathan is an accurate model on the basis of which to look at society, as if men were in a barbarous state of nature, so that only a despotic sovereign is capable of being an effective ruler. Any attempt to unite the world will fail if it is based purely on power or on coercion. Sooner or later, elites or absolute rulers will fan the flames of nationalism, with war the inevitable result. Cooperation must develop out of friendship and reason rather than being based on power.

Toward a World Ideology

Peaceful coexistence implies far more than the somewhat tainted connotation which the term has acquired from the cold war between the United States and the Soviet Union. It actually implies tolerance and respect in the fullest sense of those words. Individual nations have their

own ideologies, religions, philosophies, and many other culturally unique traits that must be respected without being allowed to interfere with mutual cooperation. Such ideologies could be assigned a "taboo" status in formal political discussions and policy decisions. Deliberate toleration and acceptance could form the basis of a new Bill of Rights for the entire world, one protecting against discrimination based on race, religion, national origin, and similar classifications. A major potential problem here is the possible clash of values resulting in espousal of a Bill of Rights. Nevertheless, humanitarian and equalitarian goals must become an essential part of any world ideology.

Evolving a world ideology will necessarily entail a fundamental appraisal of values and value systems. Are there universal values, or do they change in crossing national frontiers? Experience suggests that values transcend national boundaries, an excellent example being the many common themes found in the various major world religions. New political systems must be especially cognizant of values, both national and international, if they are to succeed. Supranational ideologies are basic to the survival of a new world order. There must be a balance between wants and needs, between national and world problems, between greed and compassion, and between immediate, short-run results as opposed to long-run benefits.

World Political Structure

World government carries with it the connotation of coercion, of the power to decree, to rule, and to subjugate. Just as American ideals needed a tangible document, the United States Constitution, to provide a basis for a corresponding political structure, a world organization is not likely to succeed except within the framework of a sound document for an international political structure.

However, a formal written document by itself cannot be said to constitute a model for government. The United States Constitution, the United Nations Charter, and the International Atomic Energy Agency Statute, as examples, must obviously function within a sphere of social acceptance. A successful model for world order will have to consider the full range of variables which determine the obstacles to, and conditions for, world order.

The United Nations

In 1975, the Director-General of the United Nations Economic and Social Council recommended the establishment of a new international economic, social, and political order "within the framework of the present United Nations system."[1] He acknowledged the present inadequacy of United Nations resources for such an effort, and recommended the creation of a special fund for the establishment of a new international order respecting the sovereignty of each nation. The objective of the fund would be to "associate

the changeover from a war economy to an economy of peace with the development of activities relating to the new international economic order."[2] In addition to preempting military funds, another source of funding would be the exploitation of mineral resources in the oceans and their subsoils. The Director-General urged the use of science and technology to eradicate poverty and illiteracy. Top priority would be accorded to the preservation of cultural identity: to the right to education, information, and culture.

World government models cannot escape problems involving vital economic and social problems. In 1974, at its 57th session, the Director-General of UNESCO pointed out that the natural and social sciences are capable of providing programs intended to solve problems where "UNESCO appears to be specially qualified to promote useful international cooperation, in agreement with other organizations of the system."[3] His faith in the UN as the organization to supervise all international efforts is based on its thirty years of successful endeavor in a complex and changing world, reflected in the adaptive organization and functioning of the UN. He considers the political will of the various states making up the UN as crucial to its success. For him, it is only a framework and an instrument, one that cannot produce genuine action simply by itself.

The United Nations is not a true world government in

the sense of possessing sovereignty over the individual citizens of its member states. It cannot levy taxes upon, or raise armed forces from, the unwilling government of a member state. However, it does have its own armed forces and its own income raised voluntarily from its members. The UN's "attempts at some kind of ordered international politics that will keep the peace, in a way that the classic alliances and balances of power systems did not, have been progressively more and more deliberate, sweeping, and in a sense successful."[4]

The International Atomic Energy Agency (IAEA)

Another successful model of intergovernmental organization is the International Atomic Energy Agency (IAEA). Its purpose is to promote the peaceful uses of atomic energy, rather than its military uses. The Agency holds meetings for the exchange of information, gives technical assistance to developing countries and, through its inspection authority, sets standards for health and safety in the field of atomic energy for its member nations, among other functions. Advice extends to the use of atomic energy in medicine, agriculture, and industry, a primary goal being to help underdeveloped nations in the peaceful use of nuclear power. The Agency is authorized to buy fissionable materials and to sell them to member states.

The IAEA has set up a control and inspection system for reviewing purportedly peaceful uses of atomic energy,

and this voluntary system has been accepted by more than 100 nations, including the United States and Great Britain. The safeguards system has become compulsory for all signers of the nuclear nonproliferation treaty which do not already possess nuclear weapons.[5]

Accordingly, the Agency is well on the way to obtaining inspection powers superior to those of individual nation-states. Its organization currently consists of a general conference of all members, meeting once a year. This conference approves the election of a 34-member board of governors handling most of the Agency's business. The board has five essentially permanent members -- Great Britain, Canada, France, the Soviet Union, and the United States. The remaining members are elected by a formula which takes the geographical distribution and technical sophistication of the member states into consideration.

The Need for a Model of World Order

There are many variables implicit in the development of a political world model. Financing and the kinds of organizations to be established are crucial issues. Multinational corporations merit serious study as examples of nongovernmental structures exercising political influence successfully. Funding problems include determining the percentage of its gross national product that each member unit (nation) must contribute. Talents need to be pooled in order to help resolve problems. Voting arrangements must be

based on regional balance and economic power. Vast economic, social, and political conflicts need to be resolved. In particular, the problems of the balance of power and of the control of atomic energy for peaceful rather than military purposes are key issues. International control and inspection come to be of vital importance. A major problem is how these and other issues can be resolved within a world model of government.

Statement of the Problem

The general problem for the study is to find or develop an appropriate model for a world order of the immediate future, one maintaining a balance between the world government and the various national governments. A major purpose of the study will be to conduct a comprehensive examination of the history of world government and of the International Atomic Energy Agency in order to arrive at a model addressing itself to the actual problems facing a world organization of the immediate future. A review of the relevant literature will be used to identify a variety of sources dealing with the history, different forms or theories, and practical problems of world government. A closely related such problem is to identify the kind of model that should be projected: its definition and its general nature.

In particular, the IAEA experience, its formal Statute, and its staff will be considered as the basis for a

model of world government. An autonomous body related to the United Nations, the successes it has enjoyed are felt to be the result of the sound processes on which it is based. An international model reflecting the IAEA experience could provide the stimulus for a cooperative effort, for single-minded action on the international stage.

Developing a successful model is recognized as depending on a number of questions and issues involving world government and the IAEA:

How has the IAEA succeeded in resolving delicate political problems and how could these same techniques be applied toward resolving problems in a new world order?

In view of the fact that nations differ in their power, needs, interests, and resources, how is world cooperation to be achieved, especially within a framework or institution of limited power? What role will be played by world ideology? What is the role of functionalism? Do the latter two clash with one another?

What are some of the basic "realities" underlying all idealistic efforts at world government? What is the importance of geopolitical theory? What is the role of regionalism? Economics? Balance of power? Atomic power? Wealth versus poverty?

What is the importance of diplomacy in power negotiations? Can expert diplomacy effect major changes which various cultural, economic, political, and military

conditions make seemingly impossible? What is the role and value of international experience and diplomacy?

What is the role and importance of international law? Is the regional factor important? How important is a formal document or constitutional mode of world government?

How does the IAEA, in the context of these and other issues, serve as a model for world government?

Definitions of Key Terms

A number of terms are especially important in the research:

Functionalism. Agency or institutional relations founded on the realities and dynamics of social, economic, and political dimensions as well as on world ideology. Social and institutional functioning is based on commonly recognized needs.

Geopolitics. An approach to world affairs which explicitly recognizes the fundamental realities of geography and politics as being highly interdependent. Geopolitics makes a sharp distinction between legal, political, and sociological facts, recognizing the need for their congruence with a geographical entity as the basis of a nation-state. Political geography views the state as a system of functioning, interrelated parts evolving along lines of regional similarities and differences. Some classifications which naturally grow out of geopolitical concepts are the "haves" and the "have-nots," the developed

and the underdeveloped nations, and the emergent and the fully developed nations.

IAEA. The International Atomic Energy Agency which came into force on July 29, 1957 and the headquarters of which is located in Vienna, Austria. Its objectives are to promote the use of atomic energy for peace, health, and prosperity throughout the world in such a way as not to further any military purposes.

International Autonomy. That aspect of an agency or organ which makes it independent of other agencies, such as an adequate budget of its own; a Statute, Charter, or Constitution; administrative organs; and unique international membership.

Model. In its most general sense, a kind of reference frame or perception of reality based on assumptions and hypotheses. As a paradigm or representation, a model is instrumental in nature and is used to describe, explain, and predict reality. A model may range from a system of mathematical equations to a set of descriptive principles.

Realism. An approach in politics, giving primary recognition to force, conflict of interest, checks and balances, and appeals to historic precedent in settling human affairs. Its view of human nature is comparatively pessimistic and it interprets interest in terms of power. Its emphasis is on flexibility and local limitations.

Functionalism and geopolitics can be considered as types of realism stressing the actual needs of people within an institutional and ecological framework.

Regionalism. An intermediate step between nationalism and world federalism, the emphasis being on regional associations presumably based on common interests and geographical proximity. Regionalism is an outcome of special spheres of influence and local balances of power. The emergence of regional law offers a potential basis for international law.

World Diplomacy. Diplomacy reflecting the needs and conditions of the world community. World diplomacy requires a corps of diplomats wise to the ways of the world and of foreign cultures. World diplomacy grows out of experiences such as international conferences, world planning, and international treaty making.

World Government. A world order established and maintained by an effective world organization.

World Ideology. A universal concept of human legal and civil rights, its ultimate aim being a world psychology and a world citizenship. It embraces the equality of all nations, bridging the gap between rich and poor, the control of arms, and peace thinking, as well as the so-called welfare rights of individual health and prosperity.

Assumptions

As has already been indicated in the introduction and in the problem statement, a number of assumptions have been made. Probably the most important assumption is that world government is a necessary step toward solving the world's problems. While the realism inherent in functionalism and geopolitics is accepted, the study nevertheless supports the assumptions underlying an optimistic world ideology. It is assumed that regionalism and the principle of international autonomy, exhibited in the functioning of the IAEA, are significant steps toward world government. Because the control of atomic energy is assumed to be a major world problem, the role and nature of the IAEA are assumed to be particularly relevant to the quest for world peace and prosperity. It is assumed that the unique IAEA experience in world diplomacy and the give and take of political "wrangling" surrounding its inception made that agency additionally qualified to play a major role in the search for world order, as has the worldwide respect it has gained through its extensive international experience involving numerous world states and eminent scientists.

Limitations

It might be argued that the chief limitation of the study is its speculative and "creative" approach to world problems, although such a standard criticism can easily be challenged. Today's plans have a way of becoming tomorrow's

realities. The model of world government resulting from the study will be more a set of conditional guidelines than a rigorous set of prescriptions. However, its lack of dogmatic certainty need not be viewed as a serious limitation. By its very nature, the study will be philosophical and analytical, and can therefore not be limited to a purely inductive treatment of data in the usual sense.

Plan of the Study

Chapter II of the study provides an in-depth treatment of the various issues raised in Chapter I. It concludes with a discussion of the major concepts and variables inherent in a world model, with special emphasis on the Falk model.

Chapter III covers the historical background of the IAEA. Special attention will be devoted to the conflicts between nationalism and the ideology of world government, particularly as these are manifested in the various individual political struggles that occurred before the IAEA assumed the role of a worldwide agency.

Chapter IV discusses in detail the decision-making apparatus of the IAEA. Its connections with other international organs and its role in international cooperation will be highlighted. Singularly relevant in this respect is the IAEA's process of making agreements.

Chapter V deals with the IAEA in relation to the

international balance of power among nations. Covered will be regional and special interest groups, the developed and underdeveloped nations, nuclear "haves" and "have-nots," the dependent nations, and the IAEA Scientific Advisory Committee in the world scientific community.

Chapter VI considers the various IAEA programs in detail. An essential idea here is IAEA international cooperation and activity.

Chapter VII presents a model of world government reflecting the IAEA experience in terms of an analysis of the content of preceding chapters.

Chapter VIII consists of a summary, the model itself, and conclusions.

Footnotes

1. Director-General of UNESCO, "UNESCO and the Establishment of a New World Order," UNESCO Chronicle 21 (September 1975): 239.

2. Ibid., p. 240.

3. Director-General of UNESCO, "The Setting Up of a New World Economic and Social Order," UNESCO Chronicle 20 (September 1974): 301.

4. Encyclopedia Americana, 1974, s. v. "World Government," by Crane Brinton, p. 212.

5. Encyclopedia Americana, 1974, s. v. "International Atomic Energy Agency," by Henry D. Smyth, p. 293.

CHAPTER II

IN SEARCH OF A MODEL FOR WORLD ORDER

Any idealistic belief in the possibility of world order must be tempered with a touch of the realism which holds that human nature will, probably, at first resist an attempt to establish world order. It is also realism that points to the almost certain destruction that awaits a world community selfishly pursuing irrational economic and political goals.

Current obstacles to world order are more complex and seemingly less susceptible to solution than at any previous time. Yet, humanity has passed through previous dark ages in which civilization was threatened and hope for its survival fleeting. The mere fact that mankind did survive provides the world with reason for an optimistic hope that overshadows "grim reality." The human spirit is alive and well in countless people who are determined, in their own way, to grow, learn, and accomplish; to advance the art of international relations and to contribute to the fund of its experience and knowledge; to do new things and to dream new, impossible dreams; and to make mankind more

tolerant and the world a better place in which to live.

The question naturally arises as to what are the necessary and sufficient conditions for world peace. What is it that brings nations to a cooperative scheme of negotiations and peaceful interaction? Historical trends describe the past, but not necessarily the future. Nevertheless, the past can serve as a guide to the probable future of world order. One especially painful lesson taught by the past is that violence begets only violence and mutual harm for all involved in it. The threat of thermonuclear holocaust is, perhaps, the major condition in favor of lasting world peace today. The bitter lesson of Vietnam is that even conventional warfare can offer little or nothing as a basis for building a desirable world community, one that is not merely at peace but functioning optimally within its social, economic, and political dimensions.

Some political thinkers believe that the time for world order is <u>now.</u> They hold that organizations, processes, and methods for dealing with real or perceived problems must be sought, found, and established. In short, a new world order must emerge, one capable of promoting the positive factors of international relations, one effectively minimizing the negative forces operating on the international scene. Such an effort in today's world is mandatory in the interests of meaningful survival.

World order is most likely to be realized under a

status system in which nations behave according to their relative merit and influence. From such a point of view, power is the capacity to contribute to a balancing of economic and human inequities. National interest becomes identified with world interest, which involves the general welfare of all mankind. The power theory that has long dominated the field of inquiry known as international relations must, therefore, be replaced by the concept of world community status.

A successful guide to international action will necessarily involve new paths in an environment of conflict. World leaders and peoples now acknowledge no common, supreme, international authority. What is needed are alternatives to violence, with the planned utilization of physical, technological, and intellectual resources in the effort to wage peace in a disarmed world. Such an approach properly possesses two fundamental characteristics: (1) placement of a high value on, and commitment to, the nonviolent solution of international conflicts, focusing on policy-relevant solutions, and (2) emphasis on socially relevant scientific work, including systematic data collection techniques and rigorous methods of analysis.

A valid world model must include a description and analysis of those circumstances under which nations move toward rational conflict resolution, with disagreement leading to negotiations, compromise, and conciliation rather

than to violent conflict. In essence, such a model is a descriptive analysis of the integrative and the disintegrative processes modifying the group structure of world politics and international interaction. The ultimate aim should be to develop explanatory theories of the causes of peace. Emphasis should be on functional systems analysis as, for example, in the case of the IAEA, with an interaction perspective designed to throw light on the role of international organizations in the development of world order. While ideal constitutional forms are relevant, an analysis of the necessary and sufficient conditions for the existence of international governmental priorities is even more important: a model focusing on a wide range of social, economic, cultural, and political units.

Breaking through the national barriers of isolation may be compared to breaking down fences. Highly instrumental in such a process is the development of a world ideology capable of bridging the gap between national cultures through the medium of commonly understood ideals and purposes. Instead of a diversified and antagonistic allocation of resources, the pooling of funds and talents would go a long way in the direction of creating the necessary conditions for world order. The IAEA experience in particular could be made to serve as a basis for developing the trend toward world unity, both as a model and as a positive influence toward that goal.

Overview of World Government: A Historical Perspective

Some five hundred years ago, individuals were remarkably unaffected by the occurrence of events only a hundred miles distant from them. By the sixteenth century, this isolation of individuals and of groups began disappearing. New trade routes, a sense of adventure, and a desire for change provided motives and means for travel and for national expansion. "It is not easy to say why West Europeans, in particular, should have taken the lead in the new ventures, but we can examine some of the main changes which affected their thinking and conveniently label them: the Ocean Revolution, the Reformation, the Renaissance, the Industrial Revolution and the Rule of Law."[1]

Although it was not exactly a world ideology in the sense of seeking a secular philosophy or theory of international political unity, Christianity was nevertheless an impetus, producing men with a mission to travel, to conquer, and to settle -- all over the world. Probably more influential than their religion were the science and technology possessed by the world conquerors. "Their ability to strike men dead at a distance with firearms, to read the words of their God from a printed book, to produce a profusion of goods and then to sail away across the seas to return with more, continued to inspire awe and a desire for imitation until very recent times."[2]

Pearson, like Toynbee, believes that such abilities

alone were inadequate, and that, unlike Toynbee, it was his superior ideas about government which secured the European's foothold in other parts of the world. Toynbee viewed growth as a process of challenge and response, with the success or failure of societies depending on how well they met human and environmental challenges, and with religion constituting an essential regenerative force. By contrast, Pearson points out how the spirit of "organized freedom," of the rule of law, gave the European a vitality eliciting a degree of cooperation often absent among the native residents of other lands. "It was perhaps these qualities most of all which enabled the European mould to be firmly impressed upon the rest of the world."[3]

The subsequent world struggle between England, France, and Spain for world domination is well-known. Empire-building was responsible for the birth of a new nation in North America. With the passing of the American frontier around 1890,[4] the colonialism and world imperialism of the past had pretty much run their full course. Marx had already preached a new kind of imperialism and slavery -- one involving the "wage slave" of capitalist imperialism. Africa was partitioned, China awoke, and Russia experienced its Communist revolution. Although there was generally more international cooperation than there had been in the past, World War I and World War II represented the ultimate in international anarchy, with nation-states attacking each

other for a variety of reasons. Independent African states were subsequently to proliferate, with Asia gradually freeing itself of Western domination.

The urbanization, industrialization, and scientization of the twentieth century need no documentation. The advance of technology -- especially technology in transportation and the media -- has brought the nations of the world into ever closer mutual contact. According to Thomson, "A revolution in Russia becomes of immediate and permanent concern to the rest of the earth; an economic depression in the United States affects the standards of living and rocks the political systems of most European nations; a war, breaking out initially between groups of nations in Europe, tends to spread until it entangles nearly every other people on the globe."[5] Thomson concludes that world history can no longer be written as a history of separate continents, and that the very content of world history must be redefined.

International unification, however, is no simple matter. For example, in discussing the problems involved in the succession to Mao's leadership of China, Sanders observes that "There is even some evidence that the Chinese political scene is regressing to the historic pattern of China at the breakdown of a dynasty in which army warlords assumed regional control in an untidy and unstable order until a new dominant figure emerged."[6]

Thomson warns against adopting an overly optimistic view of world unification. He cites the strength of the isolationist, autarkic, and separatist forces which have dominated world history for the last fifty years. While there has been an increase in international cooperation and in efforts to achieve international order and harmony, he asserts that those forces acting in favor of separation or divisiveness have gained new vitality in Asia and Africa and that they remain perhaps the strongest political forces at work in the modern world. Thomson believes that any attempt to evaluate the world scene must be in terms of four major concerns: "Material conditions, ideas and emotions, influential personalities and momentous events are the basic categories of all historical analysis."[7] According to Thomson, the secret of historical change lies in the interaction of these four factors.

The concept of world government involves more than a forced unification of previously independent states. Successful political integration does not occur as the result either of imperialism or of federalism. The Roman Empire was held together by what was probably a grudging acquiescence of the conquered peoples. Conquests such as those of the Huns and the Mongols cannot achieve true political integration, except by the annihilation of those conquered, as in Australia or in the United States east of the Mississippi River.

In more recent history, world unification through world conquest is illustrated by the Hapsburgs under Charles V and by Spain under Philip II in the sixteenth century; by France under Louis XIV in the seventeenth and early eighteenth centuries, and under Napoleon in the late eighteenth and early nineteenth centuries; and by Germany under William II and under Adolf Hitler in the twentieth century.[8]

Attempts at peaceful unification are exemplified by the Treaty of Utrecht in 1713 and the Congress of Vienna in 1815, both forming Congresses to try achieving greater cooperation among various nations. The most recent such efforts have been the League of Nations established in 1919, the United Nations organized in 1945, and a regional union, the European Economic Community (1958), which is a real union in the sense that it limits the sovereignty of its members on specific matters. "Even the Organization of American States, though it does not directly limit the sovereignty of its members, is a much tighter group than the old-fashioned classic alliance."[9]

Conditions for World Order

A number of different conditions bear on the problem of world order. Not the least of these is the issue of politics versus morality. The key problem here is the role of ethics in a world of power. While individuals are capable of displaying the highest level of ethics in their

personal lives, they are equally capable of acting quite otherwise in support of an immoral national policy. Such a policy has embarrassed many theoreticians preaching the dominance of the state over the individual, as did Friedrich Meinecke. He eventually realized that the great collective personalities of nation-states will persist and develop in new contexts as long as there are creative individuals to apprehend them and give them new life, and that the state must first of all be moral, that "not every value may be sacrificed merely to perpetuate the state's existence."[10]

International law is a significant factor in promoting world order. O'Connell points out that the nuclear deterrent, plans for technical aid, and regional associations may help in stabilizing international relations. Accordingly, these are conditions favoring world order. "Within the past fifteen years a vast new international universe has emerged which calls for regulation, and hence for rules of international law."[11] Problems listed by O'Connell include the passage of space vehicles, damage caused by them, use of certain elements of space for telecommunication, nuclear and industrial waste pollution, pollution of the seas and waterways, exhaustion of common resources in fisheries, the rapid fusion and equally rapid dismemberment of territories in unions and federations, the growth of supranational economic groupings, and issues involving the aggression, self-defense, equality,

and immunity of political states. Disagreements on such issues will, most likely, occur between socialist and nonsocialist lawyers, between lawyers of new countries and lawyers of old countries, between the rich and the powerful, between the "haves" and the "have-nots." Disagreements are also anticipated by O'Connell about whether international law should be a branch of constitutional law or whether it should be regarded more in the pragmatic spirit of the political scientist who treats it as a part of international relations.

The nation-state is still the only unit in international relationships possessing ultimate political significance. Henry Kissinger holds that international relations are conducted by political units in which the domestic structure is accepted as given, with foreign policy beginning where domestic policy ends. He notes realistically that, when the domestic structures are based on different conceptions of what is right, the conduct of international affairs becomes more complex. "Then it becomes difficult even to define the nature of disagreement because what seems most obvious to one side appears most problematic to the other."[12] Kissinger emphasizes the strong connection between domestic structures such as historical traditions, social values, and the economic system, and foreign policy. He feels that the age of superpowers is now drawing to an end, because military bipolarity has not

prevented political multipolarity. Although not speaking on behalf of a single political world order, Mr. Kissinger nevertheless makes the observation that "we will never be able to contribute to building a stable and creative world order unless we first form some conception of it."[13]

Probably the most forceful example of the application of international law was the Nürnberg trial in 1946 which resulted in the hanging or lengthy imprisonment of more than 20 Nazi war criminals.[14] Other than certain questions which could be raised as to whether the punishments were truly legal or merely those of the victors seeking vengeance, the trial points clearly to a world situation demanding international accountability as well as domestic responsibility on the part of national leaders for their actions.

There is no simplistic solution to the problem of world conflict. Conflict has no single form, and can range from a full-scale war to merely domestic and intercommunal disputes. Rikhye, Harbottle, and Egge cite power politics and the need to protect national security interests as the generally accepted major causes of war, with other, equally contributing causes including racial, religious, ethnic, economic, and social differences. "It stands to reason, therefore, that there can be no stereotyped methodology for controlling and ending conflict -- if there is to be a cure, the doctor's prescription must suit the ailment."[15] The

authors provide a detailed study of the role of third-party interventions leading to the solution of worldwide conflicts. The lessons learned by these observers should provide valuable guidelines for the functioning of a world government based on conciliation rather than on pure power.

Aranguren believes that universal agreement with respect to a univocal system of values on which to build an unshakable, ideal order is, at present, beyond reach. However, he also argues that "our intellectual labor in behalf of a world order should consist in absorbing the shocks, in lessening the tensions, in clearing the way for intelligent solutions by means of an open dialogue instead."[16] The chief obstacles, according to Aranguren, are the hardening, dogmatization, and mythification of the various political positions. His immediate goal is to make these positions more flexible, to render them more suitable for compromise through dialogue.

Because it is so easy to talk of the need for a world order without really knowing precisely what one has in mind, Jaguaribe serves a useful purpose by asking: What is world order? His general definition states that it is "the custodianship of the general interests of the world by means of a system of norms which are valid and enforceable on a worldwide scale."[17] For the norms to be realistic, effective sanctions must exist, something which, he believes, can be achieved through agencies invested with the

authority to formulate and implement norms, check on their proper observance, and restrain their violation. "Thus, any world order must consist both of a defined system of legal norms and of a defined system of agencies which will carry out the legislative, executive, and judicial functions necessary for the validity and enforcement of any juridical system."[18]

Jaguaribe delineates three means for achieving world order: the world state analogous to a United States of America on a world scale; the typical international agreement current in the world today; and the supranational authority which is intermediate between the first two models. Constituting a major stumbling block is the fear that if a major power surrenders its own hegemony, this surrender will somehow help its enemies and endanger its security. The economic and social imbalances in the world's status quo demand that any realistic plan for world order first reconcile group and national interests, especially those of the socioeconomic kind. Any successful model of world order will have to consider all of these factors, as well as the role of scientists, international economic planning, world food problems, and various regional and local viewpoints, also exhibiting an awareness of local philosophies and religions.

Obstacles to World Order

Nationalism and patriotism are frequently named as two of the major obstacles in the path of world government. Giving up complete national sovereignty is both a condition preceding and an obstacle to world government. Yet, there must be a planned balance between national and global forces. In view of the historical trend toward increasingly larger units of government, the very lack of an international plan or machinery can be regarded as an impediment to world order.

Human nature is another alleged obstacle to world order. However, human nature is influenced strongly by experience and by education. The simultaneous existence of diverse cultures is ample evidence that social norms and ideals are developed socially rather than being innate and given at birth. The challenge lies in overcoming historical and cultural biases against merging with larger and more powerful units while at the same time not surrendering individual identity.

As to the dark, "inevitable" historical forces presumably lurking in the environmental shadows, forces which, some argue, cannot be overcome as hindrances to world order, the counterargument is similar to those advanced against the pessimistic view of human nature, nationalism, and patriotism. The momentum of history is somehow never quite powerful enough to prevent the successful emergence of

new forms. The proverbial "mother of invention," necessity, operates at the international level as well as in the arts. Perhaps the chief argument against obstacles to world order is that they must be overcome if nations are to survive.

Nationalism rediverted can serve as a positive, constructive force. Directed toward international cooperation, the forces of nationalism can be converted into a world loyalty in order to bring about a strong and lasting condition of peaceful coexistence. Despite certain inadequacies of the present international organization and international law, obstacles to world order are most likely to be overcome "in progress toward common principles, practices and institutions of international cooperation, rather than in the illusory pursuit of national power."[19]

The Growth of World Ideology

Stated in relation to the goal of world government, the ultimate aim of world ideology is the realization of international cooperative interaction among all peoples. Peaceful coexistence and world cooperation imply tolerance and respect for others. Individual nations have their own ideologies, religions, philosophies, and many other culturally unique traits which must be respected without being allowed to interfere with mutual cooperation. Deliberate toleration and acceptance could form the basis of a new Bill of Rights, one protecting against discrimination based on race, religion, national origin, and similar

classifications.

Questions of human rights are now a major issue in many international disputes. Gardner points out that, while freedom has been achieved for many new nations, the world is still faced with the problem of securing individual freedom for men, women, and children. "The world today offers a very far from satisfactory answer to this question."[20]

Evolving a world ideology raises a number of questions. Are there universal values, or do values change from nation to nation? Experience suggests that values transcend national boundaries, an excellent example being the human rights issues now before the world assemblies, or even the many common themes that are found in the various major world religions. Any new world order will have to be sensitive to different value systems, both national and international, if it is to succeed. A supernational ideology must gradually emerge, just as a unique American ideology gradually developed as the basis of a free society and government in America. There must be a balance between wants and needs, between national and world problems, between greed and compassion, and between immediate, short-run results as opposed to long-run benefits.

Major Issues in World Cooperation

Against the general background provided by the preceding overview of world government, a number of major issues emerge as crucial for the purpose of developing a

model of world government. Underlying the problem of nationalism is the entity called the nation-state. A realistic theory of international politics must recognize the nature of the current international order based on the nation-state as the primary political unit. The same may be said for international law, another major issue fundamental in any discussion of world unity. Yet another such issue is the newly emerging politicogeographical reality embracing political geography and global geopolitics. Finally, world ideology needs to be considered not only in its idealistic aspect, but also in its relationship to the social, political, cultural, and economic realities existing throughout the world. These and related issues will be taken up next.

The Nation-State and Geopolitics

The world's population resides within approximately 160 political units called states. Most of the people of the world believe in the concept of the state as the best means of government for themselves. Most former colonies have become states of one kind or another -- republics such as Ghana, federations such as Nigeria, or monarchies such as Burundi. "In choosing these forms of politicoterritorial organization, the former dependencies of the world have imitated the means of government that have evolved in the Western Hemisphere, first in Western Europe and later elsewhere."[21]

De Blij distinguishes between the concept of a nation as a legal or geographical entity and as an "emotional" entity. A person who is, for example, legally of Belgian nationality may feel much stronger emotional ties with the history and language of France than with those of his home country. Similar situations hold for states which include, within their borders, various people of different racial, linguistic, religious, and other backgrounds. "If these states fail to function in such a manner as to secure the allegiance of these diverse population sectors, they will become unstable and may break up."[22]

For the political geographer, the ideal nation-state is one in which there is a close overlap between the "emotional" and the "legal" state. In such a rare instance, minorities are very small, language problems do not exist, and allegiance to national institutions is almost universal. Where clan, tribe, and nation are emotionally nearly congruent, communication problems are at a minimum.

The process of the emergence of the modern state first reached its height in Europe, spreading over the entire world from Europe. De Blij considers this development as an unprecedented phenomenon in political geography. "The present-day pattern of states with their clearly marked boundaries, functioning capital cities, systems of law enforcement, tax collection, education, armed forces, and all the many other aspects of organization is a

totally new feature in the political world."[23]

No more than a century ago, there were spheres of influence, poorly defined frontiers, ill-defined trespass lines, and expanding colonial domains, in sharp contrast to the permanency which the politicogeographical world was to assume only a few decades later. Even with their dislike for European colonials, former colonial peoples are imitating the European state system. The state idea seems to prevail, and "some of the political entities that have emerged as a result of decolonization are not really states in the theoretical sense of the word, but all are striving to achieve that goal."[24]

De Blij argues that, without a specific land area which is populated and exploited by a certain number of people, there can be no state, nor can a state function without being organized. He lists the three necessary elements of the state as territory, population, and organization. Boundaries unify or divide various people, "superimposed upon a world population which has many different languages, religions, and cultures."[25] The wisdom of a particular boundary depends on internal unity coming about as a function of economy, public transport, public services, and the political regime. Government now plays a larger part in both internal and external relationships than ever before. "Thus the type of government a state has adopted is an important factor in political geography."[26]

In most instances, government determines economic organization and military organization.

German holds that, historically, the decisive factor in the fates of nations has usually been the number, efficiency, and disposition of their fighting forces. However, this situation has changed. In spite of the hydrogen bomb and ICBM's, the military weapons of most nations remain "conventional" ones, and the two major camps (the United States and the Soviet Union) are unlikely to seek solutions to their problems through war. "Instead, these two groups are now engaged in a tactical, economic, and ideological conflict on a world-wide scale aimed at achieving paramount economic and political influence rather than at conquest."[27] Nevertheless, German regards national influence as depending directly on gross national strength, without which even the best statesmanship is not likely to succeed.

In order to estimate a nation's strength in numerical terms, German uses four basic dimensions: (1) national economy, which includes resources such as agriculture, minerals, raw materials, and industry; (2) land; (3) population (both of the latter used advisedly to avoid the implication of the German words Raum and Volk); and (4) military power.

Selecting various factors within these four areas and weighting them numerically for each nation, German

postulates four primary classes of nations in terms of their relative overall power. German's classification, differing from others mentioned elsewhere in this study, is a useful one that needs also to be examined.

In the first of German's classes are the United States and, not far behind it, the Soviet Union. The secondary powers are Great Britain (by virtue of its industrial strength and its strategic overseas bases, which make its possession of nuclear weapons effective for the time being) and China (the sheer area and numbers of which are being enhanced by controlled heavy industry growing at a startling speed). In third place are West Germany (industrially slightly ahead of Great Britain but without its strategic advantages), Canada, Japan (limited by population pressure and a lack of raw materials and markets), France (lack of nuclear weapons and a successful pacification and organization of her colonial territories), India (lack of industrial progress), and Poland. The fourth-class nations are Australia, Brazil, Czechoslovakia, Italy, and East Germany.

Placed still farther down the scale are nations such as Argentina, South Africa, Sweden, and Belgium.

German notes that the standard of living is not a major variable influencing these ratings, and he has not tried to evaluate the potential strength of regional associations. Other forms of power that are difficult to

measure are the educational system and the strength of ideological penetration, either through media such as the Voice of America or by example and national prestige.

Some states are obviously in advantageous positions -- in terms of resource base, strategic location, or otherwise -- compared with others. Some political geographers have explained these advantages by taking a determinist view that ascribes the rise of powerful nations to inevitability because of certain factors such as natural protection, water supply, soil quality, and climate, asserting that nations fortunate in possessing natural wealth are destined to be world powers. De Blij rejects such ideas:

> Most political geographers today realize that so many factors are involved in the determination of any state's place in world affairs that it is simply impossible to attribute that position to only such factors . . . . States are simply too diverse, too many factors are operative, and there are too many intangibles involved.[28]

Nevertheless, some classifications are useful, such as those of the "haves" and the "have-nots," the developed and the underdeveloped, and the emergent and the fully developed. By weighting the internal factors of unity against those of division, one can, at least theoretically, arrive at an index of cohesion for each state, which index permits functional classification. By contrast, the continuum or cycle theory recognizes a series of stages in the evolution of the state, on the basis of which a

classification can be established. The cycle theory in political geography goes back to the ancient Greeks and may be found in the works of Aristotle.[29] Its modern statement, introduced by S. van Valkenburg in the 1930's, is based on the concept of a cycle in the political development of nations, recognizing four successive stages: youth, adolescence, maturity, and old age.[30]

A contrasting and more useful approach is the geopolitical view which treats territory as an essential, life-giving force. Boundaries are static, obstructive phenomena, representing negative factors in the state-organism's growth. "Frontiers, on the other hand, are desirable and necessary, for they afford opportunities for expansion and assimilation."[31]

Two especially prominent theoreticians in geopolitics have been A. T. Mahan and J. J. Mackinder. In 1880, Mahan posited six fundamental factors affecting the development and maintenance of sea power among nations: geographical position (location), physical conformation of the state (the nature of its coasts), extent of territory (length of coastline), population numbers, national character, and governmental character.[32] Mahan focused most of his attention on the naval history of Great Britain and of the United States, in contrast to Mackinder who emphasized land power. While Mahan thought that sea power would always constitute the essence of world power,

Mackinder felt that the Eurasian core (the Pivot Area or Heartland) was inaccessible to the ships of sea power and thus capable of sheltering a great land power which might come to control the world. His axioms were that:

> Who rules East Europe commands the Heartland;
> Who rules the Heartland commands the World-Island (Eurasia and Africa);
> Who rules the World-Island commands the world.[33]

The obvious limitations of both arguments lie in their reliance only on land power or only on sea power. In 1950, A. P. de Seversky published his view that the land forces and the sea forces of the world are both subordinate to the greater power of air forces.[34] It is not, however, appropriate here to discuss the relative merits of these and other views concerning global strategy. They are merely mentioned as significant elements or issues to be considered in evolving a model for world government.

Concepts such as climate determinants, the cycle theory, and organic theory all reflect the search for orderliness in political evolution. Yet, "none of these schools of thought today has any significant number of adherents and a number of more involved theories have taken their place, theories that themselves reflect the political geographer's awareness of the complexity of the problem."[35] Two of these theories are the unified field theory and the functional approach of political geography.

In an article published in 1951, J. Gottmann pointed out that the spirit of each nation is different from those

of others, that boundaries exist because each country feels that it is different, and that political regions are distinguished on the basis of some religious creed or of a certain social viewpoint, often cherishing some symbol or set of values.[36] Areas are united politically on the basis of the circulation or movement of goods and ideas. The unified field theory posits a chain of action and interaction out of which the political entity emerges. Jones likened the process to the following chain: "Political Idea -- Decision -- Movement -- Field -- Political Area."[37] In this theory, frontiers are boundaries between fields or politically uniform areas.

By contrast, the functional approach of political geography views the state as a system of functioning parts. Hartshorne argued that political geographers should focus their attention on state-systems -- the functioning parts of the state as they relate to the whole and to each other. He asserted that states evolve along the lines of regional similarities and differences, with centrifugal and centripetal forces either binding or disrupting a state's political system.[38] These forces include the economic, political, and social forces as well as the ideological forces emphasized in the field theory approach.

Realism and International Politics

Hans Morgenthau describes two schools of thought concerning the nature of all politics, schools which differ radically in their conceptions of the nature of man, society, and politics.[39] The first school is idealistic, believes in a rational moral political order, assumes the essential goodness and malleability of human nature, seeks to reform or to remove obsolescent social institutions, trusts in education and reform, and would use force only sporadically to remedy occasional defects. The second school is relatively pessimistic, primarily recognizing force, the conflict of interests, the precarious settlement of conflicts, checks and balances, and appeals to historic precedent rather than to abstract principles, seeking to realize a lesser evil rather than the absolute good. The second school is typically identified as politically realistic, presumably concerned with human nature "as it actually is" and with the historic process as it actually takes place.

Morgenthau singles out six fundamental aspects of realism: (1) Political realism believes that politics must be based on laws rooted in "human nature" and discovered by a rational search for the "facts" offered by experience. (2) Interest is defined in terms of power and, important as good motives are, of equal importance is the intellectual ability to assess a situation in a way leading to the

successful implementation of goodness. (3) Flexibility and "workmanlike manipulation of perennial forces" is preferred to abstract ideals that refuse to take certain situational laws into account. (4) An awareness of the tension between moral command and the requirements of successful political action is essential. (5) The particular laws that govern a particular nation are not identified with universal laws; local limitations are explicitly recognized. (6) Political thought is separate from other disciplines, possessing its own distinctive intellectual and moral attitude toward political matters; that is, interest is defined as power.[40]

Morgenthau asserts that international politics cannot be reduced to legal rules and institutions, any more than the American political scene can be explained in terms of the American Constitution, federal laws, and the agencies of the federal government. "The first lesson the student of international politics must learn and never forget is that the complexities of international affairs make simple solutions and trustworthy prophecies impossible."[41] Morgenthau regards international politics as a struggle for power, but power distinguished from force in the sense of the actual exercise of physical violence. "Political power is a psychological relation between those who exercise it and those over whom it is exercised."[42] For example, the primary efficacy of military power resides not so much in its use as in its threat potential: a psychological

condition which prevents others from using power.

Morgenthau views all politics, both domestic and international, in terms of three basic patterns: it seeks either to keep power, to increase power, or to demonstrate power. The increase of national power or the preservation of colonial power does not necessarily constitute imperialism, although each can be a function of it. Imperialism can be defined variously, depending on one's point of view and position in life. Economic, cultural, and military imperialism occur both on a large scale and in miniature. "A worldwide imperialism requires countermeasures different from those which are adequate for one that is localized, and a nation that counters the latter with measures appropriate to the former will bring on the very dangers it tries to avoid."[43]

Power also takes the form of prestige. To demonstrate to the rest of the world the power that one's own nation possesses, revealing neither too much nor too little, "is the task of a wisely conceived policy of prestige."[44] While national power can be viewed in terms of geography, natural resources, industrial capacity, and military preparedness, it also resides in national character and morale. The quality of society and of government are decisive factors, as is the quality of diplomacy.

On the international level, Morgenthau considers a balance of power as "not only inevitable, but an essential

stabilizing factor in a society of sovereign nations; and . . . the instability of the international balance of power is due not to the faultiness of the principle but to the particular conditions under which the principle must operate in a society of sovereign nations."[45] The historically most important manifestations of the balance of power, according to Morgenthau, are national alliances. Such alliances naturally lead to counteralliances, and sometimes to a "holder" of the balance.

However, there is much uncertainty surrounding the balance of power solution. While power balancing is aimed at preserving the rights of all interests concerned, Spanier singles out certain overbalances by nations trying to guard their security by brandishing their power, if in no other situation than at the negotiating table: "Each nation is thus transformed into a potential, if not actual, enemy of all other nations."[46] In order to hedge against the eventualities of miscalculation and uncertainty, all nations must seek the maximum possible power.

Morgenthau believes that it is not so much the actual power arrangements but rather the moral consensus of modern state systems that makes the presumed raw power balance work whenever it actually does. "The destruction of that intellectual and moral consensus which restrained the struggle for power for almost three centuries deprived the balance of power of the vital energy that made it a living

principle of international politics."[47] Morgenthau pinpoints three structural changes as a major cause of this change: (1) a reduction in the number of great powers, reducing the former give-and-take to the bipolarity of a two-bloc system, (2) the disappearance of the balancer -- the holder of the balance or third force, and (3) the disappearance of the colonial frontier.

Morgenthau feels that a world community must precede a world state. He is especially impressed by the cultural approach taken by UNESCO, with its dissemination and improvement of culture and education as ends in themselves, with its promotion of international understanding and education, and with its general cultural activities. He regards the specialized agencies as especially effective for the purpose of building a world community: agencies such as those of the UN and the IAEA, autonomous organizations having their own constitutions, budgets, policy-making administrative bodies and membership, and owing their existence to particular agreements among a number of states the identity of which differs from agency to agency. As for the relevance of UN social and economic philosophy to the problem of international community, Morgenthau quotes Mitrany:

> If the evil of conflict and war springs from the division of the world into detached and competing political units, will it be exercised simply by changing or reducing the lines of division? . . . Any international system that is to usher in a new world must . . . overlay political divisions with a spreading

> web of international activities and agencies, in which and through which the interests and life of all the nations would be gradually integrated . . . . It must care as much as possible for common needs that are evident, while presuming as little as possible upon a social unity which is still only latent and unrecognized . . . The community itself will acquire a living body not through a written act of faith but through active organic development . . . . That trend is to organize government along the lines of specific ends and needs, and according to the condition of their time and place, in lieu of the traditional organization . . . a set constitutional division of jurisdiction of rights and powers . . . . The functional approach . . . would help the growth of such positive and constructive common work, of common habits and interests, making frontier lines meaningless by overlaying them with a natural growth of common activities and common administrative agencies.[48]

Morgenthau cites three types of functional agencies: NATO, the European Communities, and the agencies for economic and technical assistance, such as the IAEA.

> All these agencies have this in common: they try to solve a common problem, which none of the participants could have solved by its own efforts, through the coordination of technical functions on a supranational level . . . . To that end they use and develop the novel procedures of international government.[49]

The procedures are novel for Morgenthau because they combine central direction in the execution of policies with negotiated agreement, thereby also combining factual superiority in power and resources with the legal claim of all participants to equality. The procedures also tend to obliterate the time-honored distinction between international and domestic affairs and with it, the principle of nonintervention in the domestic affairs of other nations.

While Morgenthau is rather pessimistic, asserting

that international peace cannot be preserved by the limitation of national sovereignty, or under the present moral, social, and political conditions, he is not altogether without hope. He stresses the need for creating conditions conducive to establishing a world state, by working through the functional agencies just discussed, and by mitigating and minimizing political conflicts which pit two superpowers against each other. "This method of establishing the preconditions for permanent peace we call peace through accommodation. Its instrument is diplomacy."[50]

Although modern communications are a great potential aid to diplomacy, Morgenthau warns against the vices of publicity which can often destroy the delicate process of give and take at the conference or bargaining table. He lists nine rules for successful diplomacy: it must be divested of the crusading spirit; the objectives of foreign policy must be defined in terms of national interest and must be supported by adequate power; diplomacy must look at the political scene from the viewpoint of other nations; nations must be willing to compromise on all issues not vital to them; the shadow of worthless rights must be relinquished for the substance of real advantage; a nation must never place itself in a position from which it cannot retreat without losing face and from which it cannot advance without taking grave risks; a nation must never allow a weak

ally to make its decisions for it; the armed forces are the instrument of foreign policy, not its master; and the government is the leader of public opinion, not its slave.[51]

So-called "realistic" approaches, such as that of Morgenthau, must be considered cautiously because they are developed within an individual's own personal frame of reference, within his personal perception of reality. In a sense, then, reality is nothing more than one's perception of it, although it is presumably linked with both past and present experience. All models for "realistic diplomacy" which, for example, require "the removal of a crusading spirit" are not necessarily realistic in the finest sense of that word. The essence of world reform is an ideology establishment of which may very well require a crusading spirit of sorts, one tempered with some restraint. This view will be discussed further in that section of the present chapter dealing with world ideology.

International Law

According to Cyril Black, the purpose of international law is to devise and maintain a system of order for the world community of nations, and the principal challenge to such an order is the process of change which is transforming the societies of the world in a fundamental and confusing manner. "An international legal order must have roots in an established system that institutionalizes, continues and formalizes precedents, but it must also be

adaptable to changes in the system directly affecting that order."[52]

In 1930, Quincy Wright identified four unfavorable conditions then affecting research in international law: (1) the general distrust which pervaded international relations as a natural consequence of World War I, resulting in an unwillingness to rely on law rather than force; (2) a want of confidence in the stability and soundness of international law as a result of the violation by belligerents of many of its provisions with apparent impunity; (3) the nonuniversality of important institutions for developing international law, such as the League of Nations; and (4) the tendency for financial support for private research in international law to be in the form of a small number of wealthy endowments.[53] Wright balanced these unfavorable conditions with six favorable conditions which he had observed: (1) increased general interest in the subject; (2) an increase in the number of public institutions utilizing international law; (3) the increased teaching of international law; (4) an increase in the number and resources of the organizations and institutions assisting research in international law; (5) an increase in the number of technical publications and journals in the field; and (6) the increased availability of source materials in the field.[54]

Wright regarded international law as a method, a

philosophy, and a process. "As a method it seeks to formulate current international relations as precisely as possible, as a philosophy it seeks to formulate them as usefully as possible, as a process it seeks to eliminate occurrences contrary to the most precise and useful formulation it can make."[55] Wright noted a number of tendencies in international law, especially the renewed optimism -- in 1930 -- in its eventual efficacy. He pointed to the emphasis on preserving peace and eliminating the rules of war and neutrality, and to the emphasis on procedure and on the development and application of law through conscious international action. Wright cited the new emphasis on the world of science and politics, quoting Dean Pound's demand for "a legal philosophy that shall take account of the social psychology, the economics, the sociology as well as the law and politics of today, that shall enable international law to take in what it requires from without, that shall give us a functional critique in terms of itself, and above all that shall conceive of the legal order as a process and not as a condition."[56]

Wright interpreted international law as a legal science which had, by 1930, begun using analogies from other systems of law, logical analyses of fundamental concepts, theories of historical continuity, and the logical classification of objective sources, all with many variations. He particularly noted the emerging practical

character of material on the subject of international law being written at the time.

The problems involved in establishing an international legal order have become more complex in today's society, where there is the added difficulty of transferring political power from traditional to modernizing leaders and new institutions. While there is no fully satisfactory criterion for determining when a society has become "modern," it is possible to describe societies as more or as less advanced in terms of criteria such as per capita production, urbanization, literacy, and the development of mass communications, for the measurement of all of which there are usually reasonably accurate statistics available. "It is only under industrial and urban conditions that the integration of various discrete groups that make up a society can take place effectively, and that the problems of political modernization are fully faced."[57]

According to Black, political scientists and economists now envisage a society of nations coming into existence in the near future in which most countries will be experiencing the destabilization resulting from rapid and prolonged domestic transformation, so that "many of the new nations will not be able to exercise their statehood in a manner conducive to international stability."[58] This development will create a special problem of adjustment

between the needs of the majority of the less developed nations and the standards already established by the more advanced states. It can be expected that the more advanced nations will participate in the affairs of the less advanced, generating instability. "The central problem for the near future will thus be to seek to counteract this instability by direct action upon the revolution of modernization."[59]

Black arranges the major challenges to the international legal order in four categories: national development, regionalism, international functionalism, and international government. In relation to international law, national development involves the problem of how to recognize new governments and states, including insurgent, belligerent, and provisional governments, as well as the right of national existence and self-defense, and the laws of war as they affect internal war, methods of warfare, treatment of prisoners, and relations among belligerents. In the era before the First World War, international laws dealt largely with declared wars between well-established governments. Modern conflict is a much more fluid kind of warfare: "The rigid established rules of recognition and nonintervention are normally violated, and under a strict interpretation of international law the major states have no alternatives but to act illegally."[60]

With regard to regionalism, Black recognizes two

principal types: one which represents an evolution beyond national sovereignty, with the explicit aim of creating new political units by means of fusion, and one which is designed to further common political or economic interests without any substantial surrender of sovereignty. It is the first type of regionalism, already under way in Western Europe, that is of primary concern to international law. "Regional integration . . . calls for as full a revision of international law as was required originally in municipal law when national legislation was codified in the advanced societies in the eighteenth and nineteenth centuries."[61] Such integration will require the adjustment of national norms so that something resembling a common regional law emerges. The revision must encompass the entire range of law, including the relationships of higher organs of government, functional economic and social relations, and individual human rights. Black believes that, as a system of regional law develops, it will come to resemble the municipal law of a confederation or federation:

> The roles of heads of states, cabinet ministers, and diplomatic and consular agents, in the negotiation of international agreements, would eventually be transformed to resemble the roles of the members of legislative institutions in sovereign states. As international regional law would come to be legislated rather than negotiated, the role of regional courts would resemble that of domestic courts. Integrated regions would thus resemble an integrated state in macrocosm and an integrated world in microcosm, and would establish the institutional as well as the procedural precedents for a world-wide integration in the distant future.[62]

Black foresees an international system developing that would be an alternative to one consisting primarily of national states. One or more integrated regions may interact with regional groups or with more loosely associated countries to form an international system, somewhat after the manner of Europe in the nineteenth century.

With regard to international functional institutions, Black predicts that they will eventually develop a life of their own and acquire real supranational authority. Because the impact of modern knowledge results in functions that are beyond the capacities of a single state to control, "international functionalism thus represents an area of concern to international law that is distinct both from municipal and from regional law."[63]

Some aspects of international functionalism are already well developed, such as those in the IAEA, as well as those in other organizations concerned with health, communication, transportation, finance, and commerce. Black identifies other areas in which, he feels, new international laws will need to be established in the near future: the areas of arms control and outer space, for instance.

With regard to international government, Black does not believe that international law will be absorbed into a worldwide municipal law. Component units of government must be reasonably close as concerns norms, institutions, and

levels of development before they can be brought under a common legal system without compulsion. "Experience with integrated regionalism suggests that international integration is more likely to be achieved through integration at a lower level, by means of the growth or fusion first of integrated states into integrated regions and later between integrated regions, than by a worldwide federation of distinct sovereignties."[64]

Black holds that neither the international nor the interregional approach is practicable in the near future. Immediate practical alternatives mentioned by him are the United Nations as a forum and the existing international functional agencies. Assumptions of socialist or Marxist states differ widely from those of other states. "Until there is agreement regarding the fact and logic of the diversity in the outlook and interests of states that will prevail in the near future, and the acceptance of principles of international law that recognize and overreach this diversity, the foundations cannot be laid for a common law of mankind."[65]

Morgenthau traces the modern system of international law back to the great political transformation marking the transition from the Middle Ages to the modern period, or to the transformation of the feudal system into the territorial state. The main distinction between the two, according to Morgenthau, was the assumption by government of supreme

authority within the territory of the state. For Morgenthau, the main problems of international law are its decentralized character, lack of legislative power, and lack of an executive agency. Whenever attempts are made to give international law the effectiveness of a centralized legal system, reservations, qualifications, and the general political conditions of individual state systems have nullified the legal obligations ostensibly entered into for the purpose of establishing centralized functions. Morgenthau regards the decentralized character of international law as the chief obstacle to establishing an effective legislative, judicial, and executive function. "Decentralization, then, seems to be of the essence of international law itself . . . and the basic principle that makes decentralization inevitable is to be found in the principal of sovereignty."[66] However, Morgenthau considers the solution which surrenders national sovereignty to be unrealistic in the face of the current international scene. At present, nations act in terms of political reality -- which, for Morgenthau, means retaining their national sovereignty.

Falk cautions against viewing international legal codes in terms of international politics and power alone:

> It is difficult . . . to deal realistically with "spheres of influence" that are tacitly and reciprocally acknowledged by principal sovereign states as creating special prerogatives about the exercise of national power. For instance, the role of the United States in Latin America or the role of the Soviet Union in Eastern

> Europe are critical aspects of the constituted authority system that exists in international life even though these roles cannot be explained in terms of formal norms or even by reference to formal processes of decision.[67]

Falk seeks an intermediate position in which the distinctiveness of legal order is maintained while there is a responsiveness to the extralegal setting of politics, history, and morality. Thus, international law is given the legal dimension or status of a quasi-dependent variable; that is, international law both shapes and reflects the international system as a whole and may be used as a strategy for transforming the international system. Essential to any system of international law, for Falk, is a definition of priorities and commitments. His own are: (1) the minimization of violence; (2) the promotion of the human rights of individuals and groups, especially national autonomy and racial equality; (3) the transfer of wealth and income from rich states to poor states; (4) the equitable participation of diverse cultures, regions, and ideologies in a composite system of global order; and (5) the growth of supranational and international institutions.[68]

Falk recognizes five dimensions or conceptions of an international legal order. In the Westphalia Conception, the emphasis is on the coordination of sovereign units in which the nation-state concept prevails. The Westphalia Conception treats the nation-state as supreme and sovereign, relinquishing little or no power to a larger regional or world authority. Nations are sharply divided from each

other by precisely drawn frontiers or boundary lines, often strongly fortified, and border incidents may be a sufficient cause for war. This concept has been undermined by modern conditions in which territory does not provide a satisfactory basis for allocating legal authority, as it might have done at an earlier stage; where communications, transportation, a world culture, and a world economy create greater social and political unity; and where nuclear weaponry and electronic guidance systems make every state vulnerable.

In the Charter Conception, some cooperative activities are centralized and community-oriented procedures tend to displace sovereignty-oriented procedures. The League of Nations was a typical example of this conception, as is the United Nations. In practice, individual states tend to reserve the right to decide for themselves whether to use or not to use force. The Charter Conception of international order rests primarily on the capacity of nations to mount collective action based on a fair-minded interpretation of certain shared goals or ideas. Even so, such an approach, as in the UN, does tend to subordinate alliance relations and balance of power considerations. In general, governments still base national security plans on Westphalia calculations. The Charter Conception has changed greatly the rhetoric of diplomatic discourse, and this change in rhetoric may gradually produce shifts in attitude

and behavior. Recent developments that encourage a growing consensus in international law include: (1) the functional needs of unified regulation in an increasingly interdependent world; (2) the increase in the number of active national participants in international life; (3) the cosmopolitan sentiments generated by the existence of the United Nations; (4) the emergence of a global public opinion on many issues of international importance; and (5) parallel developments on a domestic level in both socialist and capitalist societies that involve the displacement of individual choice and responsibility by community choice and responsibility.[69] Supranational professionalism and the vastly greater experience of the Charter era are undoubtedly an important aspect of the development of international law.

In the Geopolitical conception, the stability of national boundaries is viewed as a consequence, to a significant extent, of the role of the predominant power held by principal sovereign states. Both the Soviet Union and the United States are good examples of this conception; they maintain the integrity not only of their own borders but exercise either direct or indirect influence on other states. Principles of geopolitics are major factors in this conception, and one of the basic concepts involved is the sphere of influence and its exercise. Falk regards such spheres as an important ingredient of the present system of international order.

In the Rules of the Game Concept, rules are followed that do not qualify as legal rules, creating an important secondary line of defense if the primary rules governing the conduct of states have failed. Such rules are typically characterized as unwritten rules or various kinds of "gentlemen's agreements." As often as not, the rules are an outcome of long tradition or of cultural habit. The rules are generally accepted standards of behavior in the nature of widely shared community expectations. They are operative especially in certain instances of warfare and are usually connected with the introduction of nuclear weapons, targets to be attacked, and the definition of belligerents.

> As with the geopolitical map superimposed on the Westphalia map of sovereign states, there is a need for a comprehensive classification of rules of the game applicable to various subject matter, their mode of creation, interpretation, and termination, and their degree of significance for a general theory of international order. Clearly, however, the de facto patterns of order should be described in a way that allows for the inclusion of rules of the game or of some more apt designation for these rules.[70]

In the Decentralized Modes of International Order Concept, individual states carry out international functions, exemplified by national governments regulating activity on the oceans and in air space, doctrines of sovereign and diplomatic immunity, and various kinds of extraterritorial jurisdiction. Accordingly, national institutions, even without an explicit effort to achieve coordination on an international basis, can reinforce the ordering potential of the international system.

The international law of the future will very likely have to operate in terms of regional groups and adopt the regional perspective. Once regional organizations have been established, Frey-Wouters recognizes five variables as decisive: institutional factors, functional factors, political factors, national and regional environmental factors, and international environmental factors.[71] She considers the contrast between rich and poor nations as an impediment to economic integration on a regional basis. In particular, regional integration without a concurrent deliberate effort to integrate the entire international system is a very questionable solution, according to Frey-Wouters.

There are a number of other issues relevant to the question of world order: world trade, monetary policies, the population explosion, outer space, human rights, and arms control. According to Gardner, the effective transfer of skills and resources from advanced to less developed nations, through multilateral channels, is an important means of international development. He cites international institutions as indispensable in coping with trade relations in a rapidly changing world economy.

> The first challenge is to reduce the trade barriers that presently impair the economic efficiency and political unity of the free world -- particularly of the North Atlantic Community and Japan. The second challenge is to find additional ways to deal with the special problems that affect the trade of less developed countries. International organizations are now the

> focus of efforts to cope with both of these challenges.[72]

Gardner sees little hope of solving trade problems with the less developed countries if a weak international monetary system compels nations to restrict their foreign trade or to deflate their domestic economies. A solid foundation of international financial law and unity requires financial cooperation.

Another crucial condition for world order involves population trends. Overpopulation could undermine the best of trade or monetary policies. "So long as we are concerned with the quality of life, we have no choice but to be concerned with the quantity of life."[73]

The exploration of outer space has stretched frontiers far beyond the boundaries of one continent or one nation. Outer space has thus become an international, global frontier. "It is the proper concern of all mankind and thus, inevitably, of the United Nations."[74] International law will have to deal specifically with outer space and with the rest of the solar system.

Arms control is essential for enhancing the safety of the international environment, so that if war does occur, governments with controlled armaments will tend to pursue policies of restraint rather than of uncontrolled escalation. Control includes the hot-line concept, nuclear test bans, bans on weapons in space, production cutbacks,

military budget reductions, regional arms control pacts, ballistic missile defenses, and the Nuclear Nonproliferation Treaty in which the IAEA plays such a vital role.[75]

Human rights are an especially essential ingredient of any world ideology designed to foster international world order, the topic taken up next.

World Ideology

The role of ideology as a basis for the formation of any kind of political entity is self-evident. It is equally evident that, for a unique world order to evolve, an essential precondition is a world ideology serving as a core or magnet around which different kinds of institutions can develop and center themselves.

The components of ideology are many and variously conceived, ranging from the social-determinist viewpoint which involves traditional mores and folkways, to the highest kind of spiritual idealism. Morgenthau, while rejecting the pessimism of Hobbes and the cynicism of Machiavelli, considers the international order, or any political order, as a competition for power in which ideologies may actually be used to conceal real aims. For Morgenthau, ideology exists in the form of the ethics, mores, and laws used in the effort to limit abuses of power. "A discussion of international morality must guard against the two extremes of either overrating the influence of ethics upon international politics or underestimating it by

denying that statesmen and diplomats are moved by anything but considerations of material power."[76]

Morgenthau asserts that recent years have witnessed the deterioration of international morality as it relates to the protection of life, and that the ethical system of past times which imposed its restraints on the daily operations of foreign policy no longer exerts its former influence. "Two factors have brought about this dissolution: the substitution of democratic for aristocratic responsibility in foreign affairs and the substitution of nationalistic standards of action for universal ones."[77] He also finds little basis for the existence of a unified world public opinion, despite apparent community-wide psychological traits and elemental aspirations. He notes an absence of shared experiences, universal moral convictions, or common political aspirations. He suggests that the ideological elements of imperialistic international politics are actually disguises and that ideologies are coordinated opportunistically with certain types of international policies. Morgenthau is inclined to place his faith more in the "realism" of a power balance than in the uncertainties of trying to motivate ideology.

A strict functionalist approach places the source of ideology in sociology, in psychology, and in economics, and the field theory approach of political geography is little different in practice, despite its emphasis on ideas and

their interactions as the impetus giving birth to social forms. The tendency of modern science is to equate ideas with social norms or with psychological traits. Accordingly, patriotism can be regarded as a mere attachment, although powerful, in the same sense that the field of advertising treats loyalty to a product it happens to be selling.

A sense of legitimacy is a fundamental condition for establishing and regulating any kind of regime, whether local or international. Though individuals may support a world government for different reasons, their ultimate support rests on a sense of right as citizens of the world in accepting and obeying the authorities, based on the conviction that the objectives of those authorities conform to their own moral principles. "On a day-to-day basis, if there is a strong inner conviction of the moral validity of the authorities or regime, support may persist even in the face of repeated deprivations attributed to the outputs of the authorities or their failure to act."[78]

The legitimacy of a world government is more likely to be achieved if tnat government's basic document or constitution includes a bill of rights analogous to the one included in the United States Constitution. According to Gardner:

> One of the important respects in which the Charter of the United Nations differs from the League of Nations Covenant is in its emphasis on human rights. The promotion of universal respect for, and observance of,

> human rights and fundamental freedoms for all without distinction as to race, sex, language or religion.[79]

Ideology is not complete unless it includes social and economic needs. For example, Article II of the IAEA Statute seeks to use atomic energy in order to promote "peace, health and prosperity throughout the world."[80]

Vehicles such as the UN Human Rights Commission and its Declaration of Human Rights, drafted and accepted by the General Assembly, were spawned by an optimism that has proved unfounded. From the very beginning, the Commission found it difficult to obtain agreement on numerous questions, and hopes for a quick acceptance of an international bill of rights began dimming. "Today, in 1965, the task is still not completed."[81]

A crucial issue is that of specific rights. Shall only civil rights be included? Alternatively, should a greater range of social, economic, and cultural rights also be included? To secure a living wage, adequate social insurance, education, and the like for the peoples of the world, such rights guaranteed by an international government, requires a welfare state made mandatory by international law. Even if these broader rights are accepted, the problem still remains of establishing norms according to which to judge whether those rights are being violated.

Implementary machinery protecting human rights is likewise a complex problem. Jacob and Atherton list six

possible approaches:

1. Some kind of international tribunal such as the European Human Rights Court, to which both individuals and groups would be able to take cases against states that had violated rights contained in international covenants.

2. A commission such as the European Human Rights Commission, exercising general supervision, empowered to examine petitions from individuals or groups and to attempt settling controversies by negotiation.

3. Ad hoc committees such as the ILO Committee on Freedom of Association, set up whenever the need for them arose, to examine petitions from individuals and to publish the results of their investigations.

4. A committee to examine complaints brought by one state against another, as envisioned in the minority and mandate provisions of the League of Nations.

5. Implementation may be left completely to states accepting the international covenants, with no provision for international supervision or control, as exemplified by the system in effect for nonself-governing territories under the UN.

6. A system under which committees were set up to analyze and comment on reports submitted by states, as in a trusteeship system.[82]

Jacob and Atherton point out that acceptance of any one of the first three suggestions would break with the

traditional concept of the relationship between international law and the individual in that individuals could petition directly to an international body. Suggestions 4 and 5 would rely on diplomacy, good offices, or conciliation to try reaching a settlement between states, without any provision for a confrontation between the individual and the offending state.

Major Concepts and Variables for a World Model

The foregoing discussion of the major issues involved in world cooperation suggests a number of fundamental concepts and variables either useful or essential to a world model. These include the concepts of micropolitics and macropolitics, functionalism, and systems thinking. Key variables to be accounted for within such conceptual systems include nationalism, regionalism, sovereignty, political power, balance of power, ideology (morality, ethics, and human rights as well as "welfare" variables such as social, economic, and political needs), international law, world peace, disarmament, and diplomacy.

These concepts and variables can be interrelated in various ways, depending on the model used, since a model serves a number of different purposes. It is a kind of "frame of reference" or perception of reality based on assumptions and hypotheses. A model is instrumental in nature and is used to describe, explain, and predict reality.[83] Its form is diverse, ranging from a system of

mathematical equations to a set of descriptive principles. Unlike models in the practical arts, conceptual models do not necessarily mirror literally the reality they presumably represent. They are paradigms useful in summarizing and presenting an overall analysis, and in some instances, they are instruments of analysis providing specific answers to specific questions.

Macropolitics Versus Micropolitics

Fundamental in any model of world government is the concept of macropolitics. It is a kind of thinking which tries to be cosmopolitan rather than parochial in its analysis of the individuals, institutions, and transactions that make up the world's political life. "It aspires to achieve a stance that views the international system as a whole rather than from the perspective of the actors within the system."[84]

Macropolitics is worldwide in its broadest applications, and is concerned with total political interactions. Macropolitics addresses itself to the needs and resources of the world as a whole, and questions regarding the nation-state, the regional organization, and even the United Nations are relatively secondary. While such questions merit important consideration, they are subordinate to the principal purpose of gaining an understanding of global realities. Reischauer adds that the cosmopolitan standards of macropolitics are "not a

prescription for the suppression of individual or cultural subjectivity."[85] Macropolitics as conceived by Reischauer stresses cooperation instead of conflict, equality instead of inequality, trust instead of fear and a balance of power.

> The practical realization of these norms, in turn, depends on the human capacity to produce abundance, because to the extent that scarcity persists the old micropolitical model will appear to be more realistic and compelling to those who have the power to choose. The transformation from micropolitics to macropolitics cannot be accomplished by violence.[86]

A psychological concept basic to macropolitics is a sense of world citizenship. Sterling argues that mere intellectual advocacy of world government is inadequate. He believes that an emotional awareness of shared interests and of a common identity as human beings is equally important. "It is this last key element that I have called a sense of world citizenship."[87] Like Reischauer, Sterling is aware of the crucial problem of power balance. "Despite the overwhelming attention we still pay to military defense and balance of power politics, these should no longer be the major concerns in international relations, at least for the more industrialized countries."[88] Sterling believes that modern nations should concentrate on a variety of new international problems, problems more crucial than that of military power. He considers narrowing the gap between the rich and the poor countries as a major problem. For him, the unit of cooperation is not only expanding but should be

encouraged to move even further in the direction of size, since the solution of future problems will necessarily be on a global scale.

By contrast, micropolitics focuses on individual agents in the political process. The policies of individual states and decisions within these states related to foreign policy are classified under the heading of micropolitics.

The Functional Approach

The functional approach concept is a means of arriving at a realistic model of international organization in terms of certain dynamics. Jacob and Atherton adopt a functional standpoint which tries to uncover the dynamics of political and social behavior. It asks why -- not just how -- people act in relation to various needs which are a function of their physical and social environment. "Functional analysis tries to identify the needs, or problems, which trigger action; then attempts to trace the continuing chain of interactions between what people do to meet these needs, the responses of success or failure that they encounter, and the resulting adjustments they then make to their actions."[89]

Any model resulting from the functional approach is, essentially, an ordered chain of events beginning with the need followed by personal action, environmental response, and adjusted action. The emphasis is on human actors and their needs rather than on systems alone. Crucial problems

for such a model include collective security in relation to regional organization, the UN's peacekeeping activities, security through disarmament, arms control, peaceful settlement of international disputes, channels of international communication, economic integration, world health and social development, the rights of groups, and the rights of individuals.

The Systems Approach

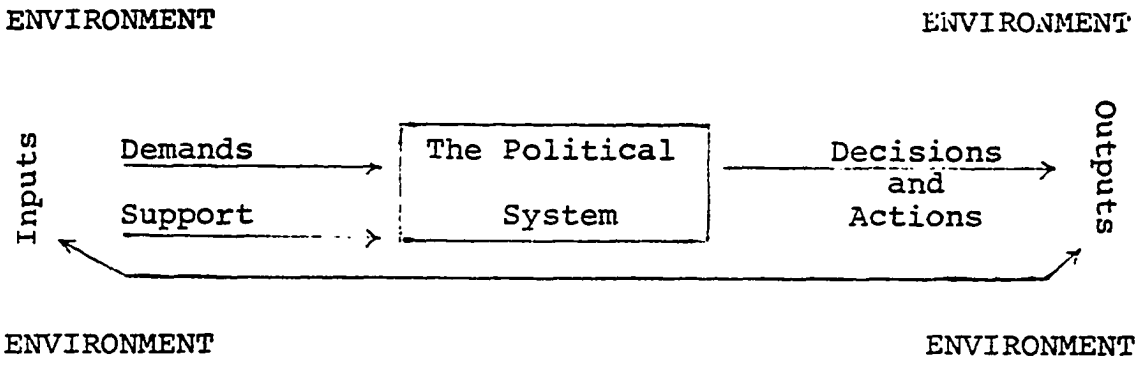
Systems analysis or thinking is consistent with functional approaches and provides a useful mode of conceptualizing a problem. Systems analysis of international political life can account conveniently for the dynamic interactions among the various elements which make up a system; the total environment is included in the analysis, embracing social, economic, political, and ecological variables. Systems theory is able to provide a "picture" of how the potentially stressful conditions emanating from the environment communicate themselves to a political system. Important variables include input, output, analysis, feedback, demands, decisions, actions, and the environment. Easton provides a simplified model of a political system, shown in Figure 1.[90]

Easton summarizes his conceptualization this way:

> Our analysis will rest on the idea of a system imbedded in an environment and subject to possible influences from it that threaten to drive the essential variables of the system beyond their critical range. To persist, the system must be capable of responding with

Figure 1

A Simplified Model of a Political System



> measures that are successful in alleviating the stress so created. To respond, the authorities at least must be in a position to obtain information about what is happening so that they may react insofar as they desire or are compelled to do so.[91]

Easton offers the fuller dynamic response model of a political system, which also includes international systems, shown in Figure 2.[92]

Models for World Order

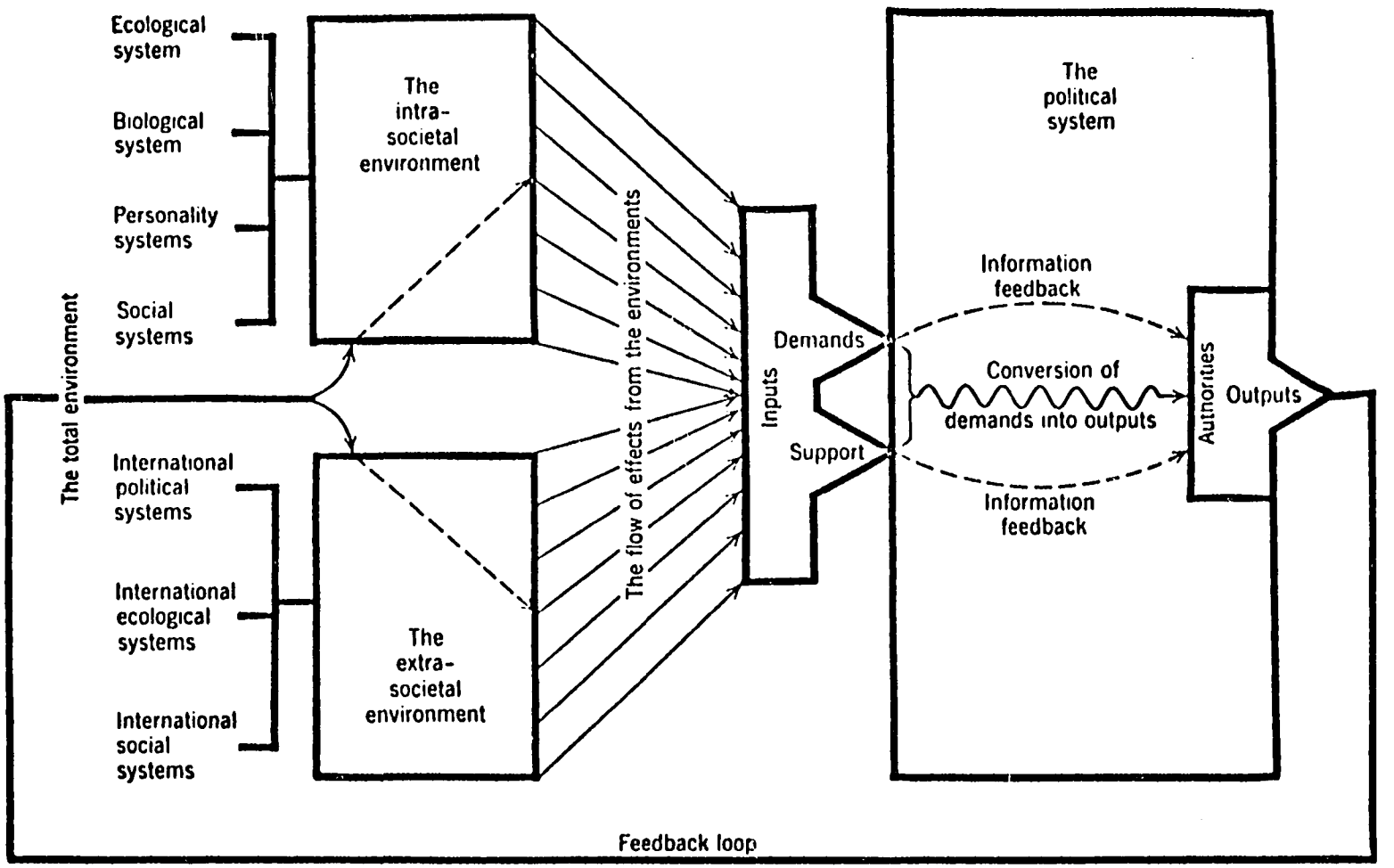
In his A Study of Future Worlds, Richard Falk presents a model for world order, one which he feels is "viable for a global movement committed to a program of drastic reform by the end of the century, without recourse to violence and without the sort of systematic shock that might be administered by global warfare, pandemic, widespread famine, or major ecological collapse."[93] The model combines a stress on preference with an emphasis on the processes by which preferences are realized.

> The process of structural reform will occur neither as a result of a single constitutional event nor as a consequence of steady institutional expansion at the global level. In essence, we expect dramatic modifications of the central guidance system to be deferred until the end of the transition process; these modifications might then result as expressions of an altered value consciousness and climate of aspiration. Indeed, if these normative preconditions cannot be satisfied, the structural reforms will remain a pipe dream, no more helpful or harmful than past flights of world order fancy.[94]

Falk's conception of world order includes the creation of rules, procedures, and institutions designed to inhibit or confine large scale violence. It also recognizes

Figure 2

A Dynamic Response Model of a Political System



the need to achieve greater economic equality among different races, regions, and nation-states, and the need to realize certain minimum conditions of human dignity for individuals and for groups throughout the world. Falk enumerates three principal objectives of his model for world order:

(1) The containment of large scale international violence and the regulation of the multiple technologies of mass destruction and mass manipulation.

(2) The construction of an integrated international welfare system concerned with the maintenance of a minimum standard of living throughout the world and devoted to the reduction of economic disparities between the rich and the poor.

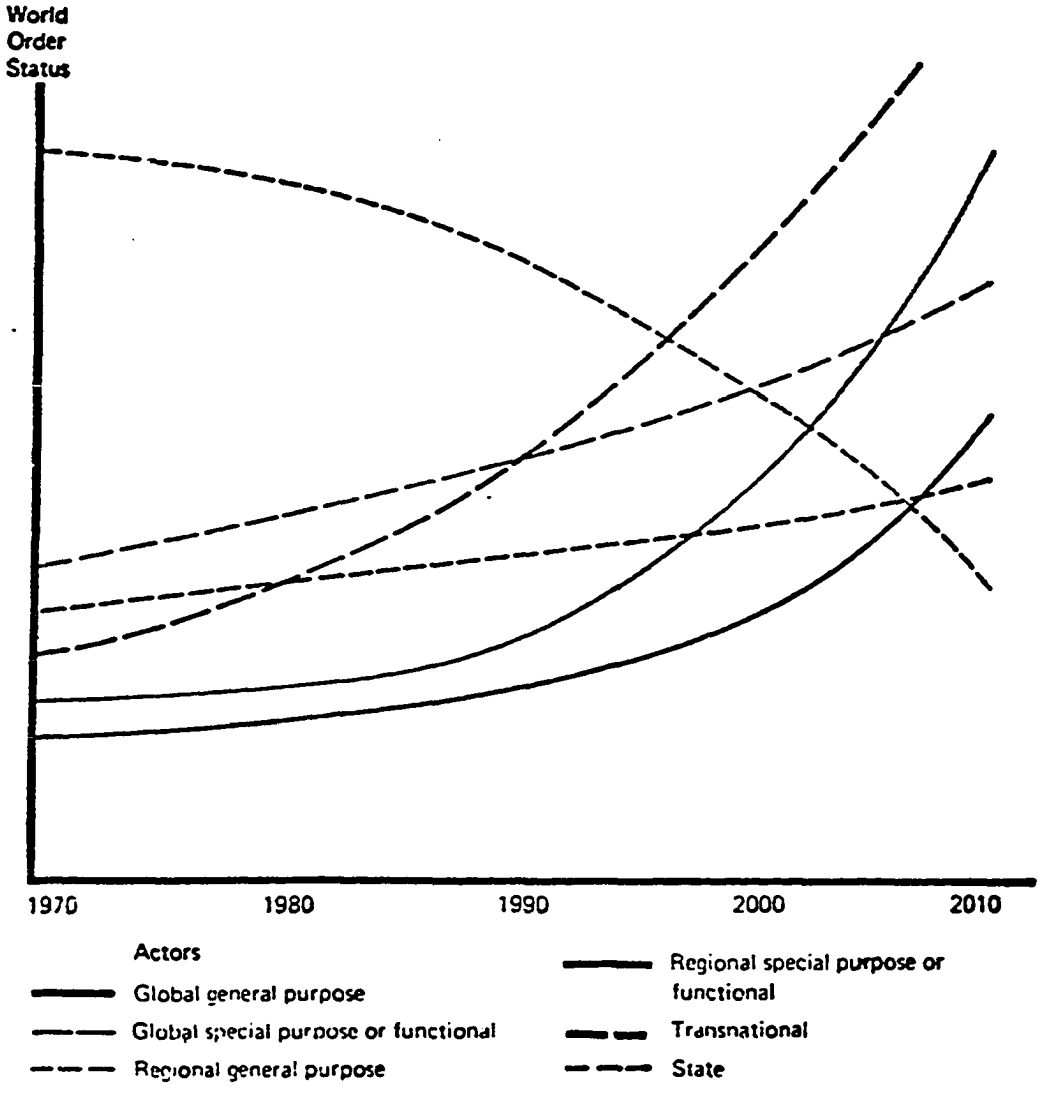
(3) The realization of minimum human rights assuring dignity for oppressed groups and liberty for oppressed individuals.[95]

In the decades ahead, Falk predicts six categories of actors developing differentially, as shown in Figure 3.[96] Falk assumes that, in his preferred model, there will be a major buildup of functional agencies at the regional and world levels, a steady growth in regional general purpose actors, an accelerating rate of growth in the organs of the global general purpose actor, and stagnation followed by a shrinkage of state actors, especially of the largest ones.

Falk envisages the year 2000, in relation to the

Figure 3

Projected Growth Curves for Actors
in the World Order System



year 1974, as follows:

(1) A United Nations Organization or its equivalent, with doubled size and status.

(2) A set of universal functional agencies with four times their present size and status.

(3) A set of regional general-purpose actors with doubled size and status, with the European regional actor expanding at a more rapid rate, to four times its present size and status.

(4) A set of regional functional agencies with four times their present size and status.

(5) A network of state actors with, on the average, only half of their present capabilities; the largest states diminishing most rapidly, while most of the smaller and middle-sized states are increasing their relative capability and influence.

(6) A tripled number of transnational actors enjoying, on the average, a quadrupled increase in status and influence.[97]

Falk explains that his preference model is not based on a world government solution accomplished through shifts of authority and power from state actors to a general-purpose global actor. Rather, his model relies heavily on a buildup of role and capability for all categories of nonstate actors, coupled with a shift in orientation, more than with a reduction in power-authority,

of state actors.

> Global functioning actors -- specialized agencies of universal scope -- are closely related to the general purpose global actor . . . . The most important structural changes will occur in relation to the central guidance capability.[98]

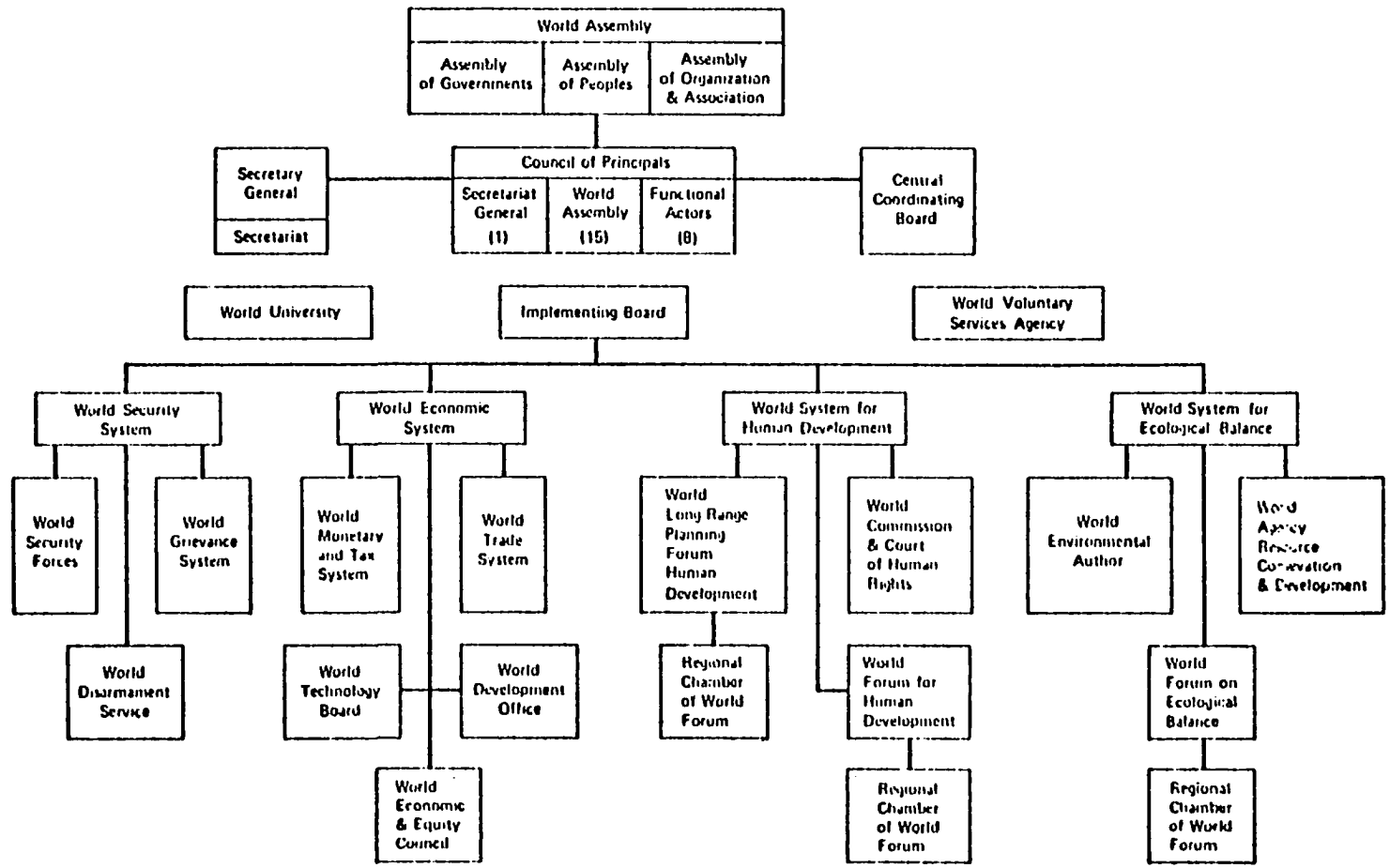
The central guidance arrangements envisioned by Falk for the 1990's are shown in Figure 4.[99]

In Falk's model, the World Assembly (WA) becomes the principal policy-making organ of the world system. It sets world standards and renders binding decisions on the basis of a four-fifths majority vote within each of its three 200-vote chambers. Its decisions can be appealed to the World Court for review.

The Council of Principals is in continuous session and is able to: (1) propose action to implement valid WA decisions; (2) act if the WA does not reach a decision; (3) act if one or more of the three chambers, by majority vote, proclaims that a state of "world emergency" exists; and (4) act whenever power has been delegated to it by the WA. The Council is composed of the Secretary General and of seven representatives from each of the three chambers. It is the chief executive body, but has no power to question the validity of Assembly decisions. "The Council could also take emergency holding action until the Assembly is able to act with respect to rapidly deteriorating or dangerous situations in any of the four sectors of principal concern: peace and security, environmental quality, economic equity

Figure 4

Central Guidance in the Preference Model



and relief, and human dignity."[100]

A Central Coordinating Board (CCB) serves as a supervisory body to assure that directives of the WA and the Council of Principals are carried out by other actors in the system. It issues regular progress reports. The Board is constituted of fifteen men of international stature, five members elected by each of the three Chambers for three-year terms.

The World Implementing Board (WIB) is the basic link between the Council of Principals and the specific implementing organizations (vertical coordination), and among the separate implementing organizations (horizontal coordination).

The Central Committee of the World Security System is composed of three Directors of the constituent implementing organizations: World Security Forces, World Disarmament Service, and World Grievance System. The Committee coordinates activities directly related to war prevention. World Security Forces have the task of peace observation along troublesome frontiers or in other troubled spots, operating as a police force rather than as an army. They coerce implementation of disarmament obligations should serious violations be verified by the World Disarmament Service. They can undertake other missions when authorized by votes in the WA or Council of Principals. They may use nonintrusive electronic surveillance and incapacitation, and

may use satellite observation systems. Falk believes that the World Security Forces should maintain some sort of nuclear deterrent power and a police force of perhaps 200,000 men.

The World Disarmament Service (WDS) has the goal of eliminating national military establishments. Nuclear arsenals are maintained for the purpose of moderating fears that erratic behavior, even by a small actor, could disrupt the entire world order system in a totally disarmed environment. Its basic functions are to supervise the agreed process of disarmament, to report violations to the World Security Forces and Council of Principals, and to verify compliance with the terms of the disarmament arrangements.

The World Grievance System (WGS) does not rely on formal international law or on a judicial process. Instead, it is strongly mediational, seeking flexible solutions. The role of the courts within the World Polity Association is to maintain constitutional restraints on the operation of the main organizational actors. The activities of the WGS are organized by a Central Commission of World Grievances which can recommend any of several channels for settlement procedures: Confidential Conciliation Council, World Conciliation Forum, Confidential Arbitration Council, and World Arbitration Forum.

The World Economic System (WES) facilitates world

economic development consistent with considerations of well-being, equalization of goals, and ecological balance. The entire world economy is assumed to be an integrated whole, with different levels of development. Aims include equal pay for equal work, the mobility of people and of ideas, and the like mobility of goods and services. The WES tries to maintain a steady-state world economy and to implement goals of human welfare and equality.

The World Monetary and Tax Policy Council works on behalf of a single-paper currency that can be used anywhere in the world for international transactions, thereby eliminating problems associated with exchange rates and a balance of payments. Its goal is to move toward a steady-state world economy. It has the power to tax incomes and governments, and to grant licenses for withdrawing minerals from the seabed or the ocean floor. All revenue is intended to pay for the activities of the World Polity Association and to promote diverse goals such as the elimination of poverty, the equalization of individual and group living standards, and the preservation of the environment. The budget is prepared by the Secretariat and is submitted to the separate chambers of the World Assembly for approval.

The World Economic and Planning and Equity Council (WEPEC) studies the underlying economic position of the preferred world order system. It is made up of fifteen

officials, five of whom are elected by each chamber of the WA for staggered six-year terms. Its main function is to report to the political organs on the degree of progress achieved in realizing a desirable variant of the steady-state economy, and on the specific obstacles in the way of eradicating inequalities.

The World Trade System (WTS) attempts to assure that trade flows promote fair values to the greatest extent possible, especially as a result of redistribution and equalizing objectives. It can impose trade regulations, can impose world duties on the transfer of goods, and has a basic commitment to free trade.

The World Technology Board (WTB) provides general policy supervision in the area of technological development. Its basic role is to stimulate beneficial applications of technology and to discourage or prevent detrimental applications throughout the world system. It coordinates its activities with the World System for Ecological Balance.

The World Development Office (WDO) encourages beneficial development patterns in the areas of growth for peer countries, equalizing tendencies in all countries and between each major sector, alleviation of mass misery, and qualitative improvement in the character of the GNP.

The World System for Human Development is committed to the process of improving the quality of human life, seeking to subordinate technology to human ends rather than

using it for exploitation or profit. The World Forum of Long-Range Planning for Human Development tries to provide opportunities for exchanging ideas about the emergent future by sponsoring activities such as conferences on certain subjects, book translations, a journal in the major languages of the world, and films and programs on satellite television. The World Forum for Human Development takes up world order issues before other institutions in the Central Guidance System. It appraises and influences current undertakings in terms of their impact on human development. The World Commission and Court of Human Rights receives all complaints charging abuses of human rights. It prepares decisions that combine findings and recommendations. The World System for Ecological Balance is motivated by goals such as environmental protection and enhancement of the quality of life for individuals and for groups. The World Environment Authority is a specialized agency concerned with maintaining environmental quality. The World Forum on Ecological Balance seeks to elaborate an underlying ideology for ecological policy that takes account of diverse perspectives and of the occasional conflicts between existing conditions and ultimate goals.

Although Falk offers the world system just sketched as a model of structural change for world order, he nevertheless adds that "changes in attitude and behavioral tendencies are likely to be more important features of a

transformed world than its bureaucratic profile."[101] Falk believes that a world political system is possible because there are indications of a widely shared cross-cultural commitment to the realization of a truly inclusive human community, evidenced by major cultural, religious, and philosophical traditions throughout the world. "We are in recent times experiencing a revival of the Stoic sense of the unity of mankind as the only meaningful basis for social and political organization of human affairs."[102] This revival is aided by improvements in communication and in transportation media, and by other developments in science and technology. Falk sees the task for the future not as one of establishing world order amid a state of international anarchy, but rather one of transforming the present world order along the lines and goals indicated above.

The Falk model is, of course, not the only model of future world government. This chapter concludes with a brief consideration of a specialized model of "peace thinking" presented by Johan Galtung. Galtung regards the presence of conflict as a major obstacle to world order. Accordingly, he seeks a conflict theory, one which does a better job of peace thinking than is current today in international circles. Toward this end, he follows a systems approach in which conflict is defined as a property of a system of action; that is, the property that "there are

incompatible goal states in the system so that the realization of one goal will exclude, wholly or partly, the realization of the other."[103] If these goals are within the same actor, the conflict is of an intra-actor nature and constitutes a "dilemma" as a problem of individual choice. If the goals are held by different actors, the conflict is of the inter-actor variety and the different actors are in conflict. The conflict may or may not be perceived, and the goals may be subjectively defined values or objectively stipulated interests.

Galtung defines three types of conflict: between "topdogs," between "underdogs," (both of which he calls symmetric), and between topdog and underdog, which he calls asymmetric. Asymmetric violence is termed structural violence, or the dominance of one group over another, resulting in conquests. Symmetric conflict is personal violence. Galtung points out that discussion or analysis of war and peace fails to distinguish between these two kinds of conflict, and such failure leads to faulty approaches to the resolution of conflicts.

Galtung distinguishes between attitude, behavior, and conflict, these three elements comprising the Conflict Triangle. "Conflict leads to frustration, which in turn leads to aggressive behavior, which leads to more conflict, and so on, with mutual extinction as an extreme but possible consequence."[104] However, there are intervening processes

of escalation and deescalation, and the study of these processes of escalation and deescalation is one of the most important aspects of peace theorizing. The genesis, dynamics, and resolution of conflict all depend on which of the three types of conflict is under consideration, a distinction not usually made, according to Galtung.

Galtung then proceeds to discuss conflict management, using the descriptive terms of his system. With reference to peace thinking, he identifies the dissociative approach in which "the best thing one can do when parties are in conflict, with or without physical manifestations, is to keep them as far apart as possible," and associative thinking in which "the best thing one can do when parties are in conflict, latent or manifest, is to keep them as close together as possible, on the theory that the more closely interrelated the parties are the less will they or can they fight each other."[105]

Galtung uses these and other terms to analyse the resolution of conflicts. A major conclusion of his approach is that most peace thinking focuses on the avoidance of violence in symmetric conflict, and when such thinking does not serve for particular cases of violence, efforts must be made to restructure asymmetric conflicts perceptually, so that they will fit the symmetric model (as by talking about external enemy infiltration).

The value of the Galtung model is that, through its

general systems and scientific sociopsychological approach, it serves to some extent as a conceptual device, a useful preorientation toward the subject which may produce some valid insights. However, its scope is limited largely to its own framework, and it is certainly not a methodological tool as valuable as the one provided by Falk. Synthetic approaches such as Galtung's are insufficiently analytical to identify the specific concepts and variables previously discussed in this chapter and so aptly integrated by the Falk model.

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CHAPTER III

HISTORICAL BACKGROUND OF THE IAEA

The International Atomic Energy Agency (IAEA) is an international organization extensively involved in the control of atomic energy on a worldwide basis. It is directed by a Board of Governors selected from 34 member states and by a General Conference with 110 member states. The Agency has its own program, approved by the Board of Governors and by the General Conference. Its budget, currently about $40 million annually, is financed by contributions from member states.[1]

Although it is autonomous, the IAEA is a member of the United Nations System and sends reports on its work to the General Assembly and to other United Nations organs. Its staff of about 1,200 persons consists of international civil servants. Administratively, the IAEA is part of the common United Nations System.

Origins: The Bernard Baruch Proposal

The IAEA came into being in Vienna, Austria on July 29, 1957. Its main objectives were to develop the use of

atomic energy for purposes of peace, health, and prosperity throughout the world, discouraging the use of atomic power for any military purposes. The actual birth of the IAEA was the direct result of President Eisenhower's address to the UN General Assembly in December, 1953. In this address, the President called for the establishment of an international atomic energy organization to serve the peaceful pursuits of society, to serve the needs rather than the fears of mankind.[2]

Early attempts to establish an international authority for the control and use of atomic energy go back to 1945. In November of that year, the government heads of the United States, the United Kingdom, and Canada met in Washington, D.C., issuing a declaration concerning atomic energy. This declaration proposed setting up a commission under the United Nations that would prepare the recommendations for "entirely eliminating the use of atomic energy for destructive purposes and promoting its widest use for industrial and humanitarian purposes."[3]

At this juncture in history, the American, British, and Canadian governments had a kind of nonproliferation of atomic power policy in effect, based on blocking the transfer to nonnuclear nations of the two requisites for nuclear development: technical knowledge and uranium, requisites both of which are now widely dispersed through the world. However, the idea was beginning to take hold --

an idea surfacing again in the proposals recently made by President Carter -- that, in the atomic age, no security system based on agreements banning nuclear weapons or even on safeguards and inspections will be effective unless it provides for certain contingencies. The Acheson-Lilienthal Report (1946) recognized the need for inspection powers outside the jurisdiction of individual states, entrusted to a single international authority. "An international administrative body would own, operate and develop the nuclear industry on behalf of all nations."[4] Such an international authority would own nuclear ores and fuels, engage in research (even in the field of nuclear explosives), and operate nuclear fuel fabrication plants and nuclear power reactors, while international inspectors would be responsible for uncovering any secret nuclear activities in which some nations might be engaged. The implications for national sovereignty were clear: control of a dangerous form of energy was essential but could be achieved effectively only through the surrender of certain aspects of national sovereignty to an international authority with powers superior to those of individual nation-states.

In December, 1945, the Foreign Ministers of the United States, the United Kingdom, and the Soviet Union met in Moscow and agreed on a resolution to be presented to the United Nations General Assembly. This resolution was passed in January, 1946 and resulted in the creation of the United

Nations Atomic Energy Commission (UNAEC). For the purpose of preparing proposals for the UNAEC, the United States established a committee chaired by then Undersecretary of State Dean Acheson. The committee then named a board of consultants headed by David E. Lilienthal, and the two groups prepared a special report dealing with international control of atomic energy. This report came to be known as the Acheson-Lilienthal Report.[5]

The United States representative on the UNAEC at that time was Bernard M. Baruch. He and his associates expanded the Acheson-Lilienthal Report into a set of proposals subsequently referred to as the Baruch Plan. The Plan, which will be discussed in detail shortly, proposed that an International Atomic Development Authority be created. After several years of work, involving more than 200 meetings, the UNAEC informed the Security Council in 1948 that it had reached an impasse and discontinued its work.[6] Although the reports of the UNAEC were still being passed by the Security Council and by the General Assembly, the deadlock reached by the Commission eventually (1952) caused its official dissolution.

The Debate at the United Nations

The debate at the United Nations was influenced by the nuclear balance of power. Bernard Baruch felt that America would not long be able to retain a clear monopoly on nuclear energy and that the problems that had been created

by it could not be solved by any one nation, no matter how powerful. Because the common responsibility of all nations in the control of atomic energy was a crucial concept, "The control of this cosmic force demanded international cooperation of a character never before achieved in world society."[7]

The first major step toward a plan for controlling atomic energy was taken in January, 1946, when Secretary of State Byrnes appointed a committee to investigate the problems involved. The committee consisted of Undersecretary of State Acheson, Dr. James B. Conant, Dr. Vannevar Bush, former Assistant Secretary of War John J. McCloy, and Major General Leslie R. Groves, who had headed the Manhattan District (the code name for the atomic bomb project), and set out to study the issues underlying atomic control. The committee was assisted by a board of consultants headed by David E. Lilienthal, then Chairman of the Tennessee Valley Authority.

President Truman wanted Bernard M. Baruch to serve as the American representative on the United Nations Atomic Energy Commission. There was some public controversy over the selection of Baruch because it was widely believed that only a scientist should serve on boards concerned with control of atomic energy. Baruch rejected the idea that the problem was a purely scientific one and, like Einstein, regarded it as an ethical and political problem. Baruch

found scientists willing to assist him: men such as Robert F. Bacher, Arthur H. Compton, Harold C. Urey, J. Robert Oppenheimer, Richard C. Tolman, and David E. Lilienthal.

A major debate revolved around providing effective international jurisdiction over atomic energy matters. What means could be devised to detect violations? What would constitute an effective system of inspection? Baruch viewed the central issue as one of enforcement: "Consequently, I insisted that any plan for the control of atomic energy contain provision for sanctions against those who violated the rules."[8]

A particularly sensitive issue was that of the veto power in the Security Council. Since any permanent member, by casting a veto, could prevent the UN from acting against a violation of the atomic agreement, "We proposed that once the atomic control agreement was ratified, the veto power could not be exercised against the application of penalties invoked under it."[9]

Baruch was greatly impressed with Truman's role in the matter. Baruch believed that Truman had a firm grasp of the subject, and that he "displayed an understanding of the plan, and a determination to make it work."[10]

In his June 14, 1946 speech to the United Nations Atomic Energy Commission, Baruch emphasized the terrifying power of science and of atomic warfare. His plan for the control of atomic energy included the following points:

1. Managerial control or ownership of all atomic energy activities potentially dangerous to world security.

2. The power to control, inspect, and license all other atomic activities.

3. The obligation to promote the beneficial uses of atomic energy.

4. Research and development responsibilities of an affirmative character intended to put the Authority in the forefront of the expanding fund of atomic knowledge, enabling it to understand, and therefore to detect, misuses of atomic energy.[11]

The Authority was to have the right of free access to atomic energy facilities at all times and the right to impose sanctions on violators. No veto power would protect those violating international law.

Baruch reported that reaction to his proposals was extremely favorable in the United Nations, except among members of the Communist block of nations. Truman, however, wrote Baruch that "It is my opinion that we should stand pat on our program."[12] Truman felt that there had to be an assurance that the raw materials from which atomic energy could be released would be controlled at the source and that the United States should not "throw away our gun" until it was certain that the remainder of the world would not arm against the United States.

Secretary of Commerce Henry A. Wallace, however,

concurrently called for the United States to scrap its atomic proposals, asserting that they were one-sided, unworkable, self-righteous, and take-it-or-leave-it types of approaches. Shortly afterwards, Truman asked for and received Wallace's resignation. Wallace later voiced the feeling that he had not been kept fully posted about relevant developments, expressing regret that he had not consulted with Baruch earlier.

After six months of debate regarding the control of atomic energy, Baruch was ready to concede that continued discussion would be of little benefit. In an AEC vote, Great Britain sided with the United States and eight other nations in support of the America plan, while only Poland and the Soviet Union abstained. However, the deadlock with the Soviet Union persisted. Baruch observed that the atomic bomb had the effect of making all nations equal and that if the Russians were only to comprehend this fact, they might show more willingness to accept a workable plan for atomic energy control. Fifteen years later, Baruch concluded:

> I am certain that it is still scientifically and technologically feasible to devise an effective system of control. We must not settle for less. In this case, it is not better to accept half a loaf. To do so would be to lull the world into a false sense of security, jeopardizing our own survival.[13]

Failure of the UN Atomic Energy Commission (UNAEC)

The UNAEC discontinued its work in 1949. In succeeding years, America lost its nuclear monopoly. From

1951 onward, negotiations dealing with nuclear controls were linked with those concerning traditional disarmament. "The surprising speed with which the Soviet Union was catching up in the nuclear field (and in particular its breakthrough into the thermonuclear field in 1953), the British explosion of 1952 and the French decision -- of the same year -- to build large plutonium-producing reactors fueled with the uranium recently discovered in France itself made it clear that the Soviet Union and the United Kingdom had reached the most advanced stages of industrial nuclear technology and that France would do the same fairly soon."[14] The desire to initiate a process of détente and disarmament induced the United States suddenly to change its policy at the end of 1953.

President Eisenhower's Proposal

In his memorable December 8, 1953 speech before the UN General Assembly, President Eisenhower, just back from the Bermuda Summit Conference between the United States, the United Kingdom and France, again proposed establishing an international agency for atomic energy. Concerned about the balance of terror which was becoming the principal feature of the relationship between the two greatest world powers, he sought an agency to which those nations most advanced in the nuclear field would contribute natural uranium and fissionable materials donated from their national stockpiles. The new agency would presumably have control

powers limited to verification of the peaceful uses of the materials which it would be responsible for receiving, storing, and redistributing.[15]

The Soviet Union was at first reluctant to discuss the Eisenhower proposal; the Soviets insisted on a solemn prior renunciation of the use of the hydrogen bomb and of other weapons of mass destruction, actually embracing the American arguments of 1946. A major issue was that of preventing the diversion by other nations to military uses of fissionable materials originally intended for nonmilitary uses. Safeguards governing the use of atomic materials replaced the issue of international inspection that had been so prominent in the late 1940's.

One year after President Eisenhower's 1953 address to the UN General Assembly, that body passed an Atoms for Peace resolution, unanimously expressing the hope that an appropriate agency could be established immediately. Work on drafting a plan based on this resolution was started in Washington, D.C. in April, 1955 by eight nations (Australia, Belgium, Canada, France, Portugal, the Union of South Africa, the United Kingdom, and the United States of America).[16]

Concurrently, the United Nations was organizing the first International Conference on the Peaceful Uses of Atomic Energy, a conference which convened at Geneva, Switzerland in August, 1955. This conference enabled

nuclear scientists from all parts of the world to exchange and compare information for the first time. One result of the Conference was to increase the demand for early creation of the Atoms for Peace Agency. It was agreed that the statute for this agency would be submitted to all members of the United Nations, and to various specialized agencies, for approval. The original negotiating group was expanded to 12 nations, representatives of which met in Washington, D.C. early in 1956, in order to complete drafting the statute. The draft which resulted was submitted to the Conference on the Statute of the International Atomic Energy Agency. After a final revision, the Statute was unanimously approved and signed on October 26, 1956, and the IAEA had been born.

World Government Versus Nationalism

World government versus nationalism was a central issue in the debates that took place before the IAEA became a reality. The Acheson-Lilienthal Report and the Baruch Proposal revolved around the idea that, in the atomic age, no security system based on agreements banning nuclear weapons or even on inspections provisions would be effective.

> In the Report, it was proposed that all operations which were dangerous from the point of view of nuclear weapons development be placed outside the competence of individual States and entrusted to a single international authority. An international administrative body would own, operate, and develop the nuclear industry on behalf of all nations. The international authority would be the owner of nuclear ores and fuels, would carry out research (even in the

> field of nuclear explosives) and would operate nuclear fuel fabrication plants and nuclear reactors, while international inspectors would be responsible for discovering any clandestine activities which took place.[17]

These ideas were presented to the United Nations Atomic Energy Commission by Bernard M. Baruch, in his proposal. As already noted in the foregoing discussion, a political clause had been inserted calling for abolition of the veto with respect to immediate sanctions against a nation seriously violating the desired treaty. In this American proposal, the authority was designated the International Atomic Energy Control Agency (IAECA), because its aim was to control nuclear energy worldwide. "The transition from national to international controls would take place in stages still to be specified, the last stage being accompanied by the surrender of nuclear weapons to the international control agency."[18]

From the start, the Soviet Union and Poland were opposed to the American plan. As a preliminary step, they demanded the unconditional prohibition of nuclear weapons, later accepting the idea of periodic inspections but rejecting the principles of international ownership and management. The Soviet Union regarded these principles as constituting an undue limitation on national sovereignty.[19] After the failure of the UNAEC, there was little or no talk about the IAECA, and the idea of international ownership and management came to be discussed less and less as more

countries embarked on their own nuclear programs.

Atomic stockpiles increased steadily. Discussions concerning nuclear disarmament now focused on the transitional stages involved and on various prohibitions covering the manufacture, stockpiling, and use of nuclear weapons accompanying the gradual establishment of atomic safeguards.

President Eisenhower's goal in the 1950's was to end the balance of terror that was becoming the principal element in the relationship between the major world powers. As envisioned by him, the IAEA would be under the auspices of the UN and responsible for the materials entrusted to it: materials intended for peaceful applications of atomic energy, especially for generating electricity to be distributed in a way benefiting all nations. The inspection powers of the IAEA were to be limited to verifying the peaceful utilization of the materials which it would stockpile from national stores.

Two opposite demands of the 1950's were the American insistence that the Soviet Union open its facilities to international inspection and the Russian demand for the prohibition and destruction of nuclear weapons. A unique feature of the Eisenhower approach was that nuclear détente would not be characterized by the conflicting demands of two major, rival nuclear powers; issues would be dealt with on a multilateral rather than on a purely bilateral basis.

Eisenhower felt that two giant superpowers with a monopoly on "atomic terror" could be neutralized at least to some extent through the greater balance implicit in a multilateral approach.

An important feature of the 1955 negotiations in Washington was the conciliatory attitude of the Soviet Union. The kind of organization which emerged from the negotiations was one which had very broad control powers, powers applying both to the transfer of materials placed at the new agency's disposal and to bilateral or multilateral agreements concerning efforts to verify the nonmilitary character of certain materials. "With regard to the latter type of agreement it was decided, despite Soviet opposition, that the associated safeguards costs should be borne by the new agency, since the safeguards would be contributing to the maintenance of world peace."[20]

A difficult question concerned the Board of Directors or Board of Governors of the new agency. The original Board of Governors had been virtually unable to cope with such problems as the secret output of uranium and thorium materials, the demands of India and of the Soviet Union for broad, geographic representation, and the desire to accommodate both the industrialized and the developing nations. The compromise reached in April, 1956 provided for a fairly large Board, one consisting of 23 members -- presumably large enough to allow for democratic

representation: a group of five nations consisting of the greatest nuclear powers (the United States, the Soviet Union, the United Kingdom, France, and Canada); four producers of source materials (Belgium, Portugal, Poland, and Czechoslovakia) to have seats on the Board every second year; one provider of technical assistance and at least one member each from the geographic areas of Latin America, Western Europe, Eastern Europe, Africa and the Middle East, South Asia, Southeast Asia and the Pacific, and the Far East. The Board was eventually, however, expanded to 34 members.

> It was the first time that the expression "equitable geographical distribution" had been replaced by a list of geographical areas in the statute of a United Nations agency. Most other important questions -- such as the respective roles of the various organs of the new agency, the relationship between it and the United Nations, and the financial regulations -- had been resolved unanimously.[21]

The Article XII Battle

The IAEA ratification conference that started September 23, 1956 in New York consisted of representations from 81 nations. Before final ratification, there was a conflict known as the Article XII Battle. Article XII of the IAEA Statute concerned Agency safeguards. Under this Article, the Agency had the right, among others, to examine or inspect atomic facilities and equipment and either to approve or to disapprove them for the purposes of assuring that they would not further any military purpose and that

they complied with health and safety standards. The Agency could call for and receive progress reports and operating records. After consultation with the state or states concerned, it could send inspectors to the facilities involved, and these inspectors would always have access to all installations and data. Noncompliance by a state would result in its being reported to the Security Council and to the General Assembly of the United Nations. Failure to comply might lead to the Agency's immediate curtailment or suspension of assistance to and a demand for the return of materials and equipment previously made available to the recipient member or group of members, as well as to suspension of the rights and privileges of membership.

Accordingly, safeguards became an especially controversial issue. A number of countries, some of them from the Third World, tried exempting natural uranium from safeguards. "They likened safeguards to neo-colonialism, pointing out that in general the nuclear weapons powers would be exempted since, owing to their advanced stage of development, they would never have to request the assistance of the new agency."[22]

India's position was that the new agency should give assistance only to those countries which did not have military programs (programs in the field of nuclear and thermonuclear explosives and radiological weapons). India vigorously opposed the IAEA's right under Article XII, with

respect to facilities under its jurisdiction, "to decide on the use of all special fissionable materials recovered or produced as by-products and to require that such materials be deposited with the Agency, except for those quantities which the Agency allows to be retained for specified non-military purposes under continuing Agency safeguards."[23] It was feared that the new agency might use this power to acquire too strong a hold on some nation's economy.

Article XII was approved, with some modification. It gave a nation the right to retain, from the fissionable materials which it had produced, such quantities as it deemed necessary for its own use: for research and for fueling the nuclear reactors which it already possessed or which it was in the process of constructing.

The General Purpose of the IAEA

The IAEA that finally emerged had the purpose of acting as a clearinghouse for the pooling and coordination of research and experience in the peaceful uses of the nuclear potential. It was especially concerned with providing the underdeveloped regions of the world with the advantages of atomic energy, with the skills and materials needed to share in the benefits of the atomic age. It sought to ensure that its activities, or activities in which it took part, would be devoted entirely to civilian uses of atomic energy. This purpose implied that it would establish a system of supervision and control aimed at ensuring that

none of the materials it controlled could be used for military purposes. It tried to make public understanding the basis for acceptance of nuclear power.

Two indirect outcomes of the Agency's activities have been nuclear safety and environmental protection standards. The IAEA has formulated basic safety standards for radiation protection and issued regulations and codes of practice for specific types of operations. It has established a system to facilitate emergency assistance to member states in the event of radiation accidents. "Many additional manuals of guidance on radiological safety practices have been issued by the IAEA in its Safety Series and Technical Reports Series."[24]

The Early Years of Accomplishment

The IAEA's First General Conference was held in Vienna, Austria during the month of October, 1957. At the beginning of the conference, there were 54 member states, a number which increased to 59 by the end of the meeting. Adding to the 13 states already on the Board of Governors, the Conference elected 10 new members. Some $4.1 million was voted to carry out the initial working program. Vienna was chosen as the site for the permanent headquarters of the IAEA.[25]

Guiding principles were established for dealing with specialized UN agencies and with other international, intergovernmental organizations. Under the agreement made

with the UN, the IAEA was recognized as an autonomous international organization within the United Nations System. The Agency was to submit yearly reports on its activities to the UN General Assembly, to the Economic and Social Council, to the Security Council, and to other organs of the United Nations, on matters germane to their special fields of competence. W. Sterling Cole of the USA was approved by the General Conference as Director General of the IAEA, for a term of four years.[26]

In 1958, the Agency announced that more than 200 fellowships were available for training in nuclear techniques. The Soviet Union was toured by an IAEA group for the purpose of observing national and international atomic installations in Moscow, Dubna, and Leningrad. A panel of experts from 10 countries was convened to assist in drawing up health and safety recommendations to govern the packaging, transport, use, and disposal of radioisotopes. Its first technical publication, the "Manual of the Safe Handling of Radioisotopes," was issued in December, 1958. Canada offered three tons of natural uranium, free of charge, to meet the first request for nuclear fuel, submitted by Japan. The USSR donated periodical literature, and a provisional laboratory was installed in the basement of the Agency's Vienna headquarters. The Second International Conference on the Peaceful Uses of Atomic Energy was sponsored by the UN and held in Geneva.[27]

The year 1959 saw a shift from planning to actual launching of programs. Growth was notable in the field of technical assistance, including fellowships, health and safety, and radiation protection. The first supply of nuclear fuel from the IAEA, subject to application of IAEA safeguards, was approved by the Board in January. Agreements covering the supply of special fissionable materials were signed by the IAEA and by the USSR, UK, and the USA. Four preliminary assistance missions were sent to member states upon their request. These missions studied the needs of the countries for technical assistance in the areas of nuclear power and energy, research, the use of radioisotopes in agriculture and medicine, and prospecting for nuclear raw materials. The Board approved almost a quarter of a million dollars in technical assistance to three countries, including a radiation unit for Cairo, Egypt and the services of nuclear experts and instruments for Thailand and Indonesia. Twelve nations made special training facilities and 200 fellowships available to the IAEA's nuclear science training program.[28]

The years from 1960 to 1968, the year of the Nuclear Non-Proliferation Treaty, reemphasized the activities of the first three years. The Agency continued concentrating on technical assistance, training, research and surveys, scientific meetings and publications, and the formulation of safety codes and regulations. Cost reduction studies were

also undertaken. New varieties of crop plants resulting from seed irradiation were reported by several nations. Nuclear Fission, a quarterly journal devoted to plasma physics and controlled thermonuclear research, launched publication in 1960. The Board of Governors approved a safeguards system including principles and procedures designed to ensure that assistance given by the IAEA would not be used to further any military purposes.[29]

In 1961, 84 research contracts were awarded to 29 member states. In 1962, the first safeguards inspection by the IAEA was carried out at the NORA facility in Norway. In 1963, the IAEA assumed the responsibility for safeguards under the bilateral agreement between Japan and the USA, the first step toward replacing the control functions previously exercised under multilateral agreements by fully international safeguards. In 1964, a Reactor Card Index providing quick reference covering 440 nuclear reactors around the world was produced by the IAEA. In 1965, the IAEA and the European Nuclear Energy Agency organized a symposium on practices in the treatment of low and intermediate level radioactive wastes. In 1966, the IAEA extended its safeguards procedures to nuclear reprocessing plants used to recover fissile material from spent nuclear fuel. In the same year, the first major step toward creating a worldwide system of processing nuclear information was taken by the IAEA.

By 1967, the Agency had already awarded 1,500 fellowships, more than 1,000 persons had taken 62 Agency organized training courses, more than 100 visiting professors had been provided to requesting member states, and almost 14,000 scientists had met at 87 conferences and symposiums sponsored by the IAEA. By December, 1967, the revised IAEA safeguards system covered 65 reactors and 30 nuclear installations in 29 nations.[30]

While these nations represented only a small fraction of the 110 nations that eventually became members of the IAEA, the safeguards system covered most of the nuclear reactors in existence at the time. All present 110 members of the IAEA are automatically covered by the nuclear reactor safeguards system.

Particularly important was the high level of the scientists, diplomats, and national leaders associated with the IAEA from the very beginning. The Scientific Advisory Committee of the IAEA met in 1958 for the first time and included Dr. Robert Spence, Dr. Bertrand Goldschmidt, Professor Vassily S. Emelyanov, and Professor Isidore Rabi. In 1961, Dr. Sigvard Eklund, a Swedish nuclear scientist who had been Secretary General of the Second United Nations Conference on the Peaceful Uses of Atomic Energy in 1958, succeeded Sterling Cole as Director General of the IAEA. In 1962, Dr. Homi J. Ghadbha, the brilliant chairman of the Indian Atomic Energy Commission, addressed the opening

session of an IAEA symposium held in Bombay concerning the use of radioisotopes in soil-plant nutrition. The IAEA's International Centre for Theoretical Physics in Trieste, inaugurated in October, 1964, was directed by Professor Abdus Salam of the Imperial College in London, ably assisted by Professor Paolo Budini of the University of Trieste. By invitation of the Japanese government, the ninth regular session of the IAEA's General Conference was held in Tokyo in 1965. In 1968, the Secretary General of the United Nations, U Thant, visited Vienna to inspect the site planned as the future headquarters of the IAEA. At the Techfilm Festival in 1968, the "Granat Grand Prix" was awarded to the IAEA film "The Nuclear Challenge." In 1975, an agreement for cooperation between the IAEA and the European Atomic Energy Community (EURATOM) was signed by Dr. Sigvard Eklund. The agreement provided for cooperation in the field of the peaceful uses of atomic energy, consultations on matters of mutual interest, participation in meetings, exchange of information, and the maintenance of contacts between the Secretariats of the two organizations.[31]

The Non-Proliferation Treaty of 1968

On June 12, 1968, the General Assembly of the United Nations adopted a resolution praising the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). On July 1, 1968, the Treaty was opened for signature in Moscow, Washington, and London. The NPT sought a comprehensive

safeguards agreement with the IAEA. "Upon its conclusion in 1968, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) was acclaimed as the most important international agreement in the field of disarmament since the nuclear age began and a major success for the cause of peace."[32]

The NPT itself did not contain any security guarantee as such to the non-nuclear weapon states that would relinquish the right to manufacture or acquire nuclear weapons. The three depositary governments, the USSR, UK, and USA, reasoned that the best assurance of security could be provided within the framework of the Charter of the United Nations. On June 19, 1968, the Security Council adopted Resolution 255 (see Appendix A). This Resolution pledged assistance to non-nuclear weapon states attacked or threatened by attack with nuclear weapons. The Resolution also reaffirmed the inherent right of individual and collective self-defense laid down in Article 51 of the UN Charter. "The resolution thus became the first complementary measure to the Treaty on the Non-Proliferation of Nuclear Weapons."[33]

The NPT was a multilateral arms control agreement between members of the international community whose aim it was to contain the threat posed by the existence of nuclear weapons. In political terms, the NPT might be said to have transcended its importance as a major arms control measure. "By its genesis and its impact on political relations

between States, the NPT has become an integral part of détente, whether we take this to mean a general relaxation of international tensions, the normalization of relations between the major powers, or the incipient period of mutual understanding and cooperation in Europe, to which the leading statesmen pledged their nations at the third stage of the Conference on Security and Cooperation in Europe a little more than a year ago [in 1966] in Helsinki."[34]

The Treaty was essentially an international, multilateral agreement with the principal purpose of restricting the ownership of nuclear weapons to five powers: China, France, the United Kingdom, the USSR, and the United States of America. These nations had exploded nuclear devices before January, 1967, so that the intent of the treaty was to prevent the spread of the ownership of nuclear weapons to other nations. The Treaty contained provisions for international cooperation in the peaceful uses of nuclear energy, peaceful nuclear explosions, and the continuation of nuclear disarmament.

Political Significance of the NPT

The NPT negotiations were set in the context of international politics and, therefore, subject to the same forces and influences as is politics in general. The NPT was clearly intended to relax international tensions and to help achieving détente. The entire process of détente, particularly in the relationship between the USA and the

USSR, first took form at the Geneva disarmament negotiations after the Cuban missile crisis. The first major result of these negotiations was the Moscow Test Ban Treaty of 1963. Actually, their most significant result was the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

The political significance of the Treaty becomes even clearer when one considers that the talks were brought to a successful conclusion in an international situation burdened by armed conflicts in Vietnam and in the Middle East. Especially in Europe, the Treaty represented a major contribution to détente, the results being formalized at the Conference on Security and Cooperation in Europe. Pastinen raises the questions: Would Brandt's "Ostpolitik" have been possible without the NPT? Would there have been agreements between the Federal Republic of Germany and the USSR and between the Federal Republic of Germany and Poland, and would there have been an agreement about Berlin? Would the normalization of relations between the two Germanies have been achieved and their international status settled? Would there have been a Conference on Security and Cooperation in Europe, and would the MFR talks have taken place in Vienna? "The conclusion seems obvious and hindsight does not detract from its value."[35]

In assessing the political significance of the Treaty, it needs to be kept in mind that the SALT negotiations are a direct outgrowth of Article VI of the

NPT. In addition to the agreements already consummated and expected ones dealing with the limitation of atomic arms, the continuing dialogue at the SALT talks is of vital political importance for the relationship between the USSR and the USA, if détente is to be furthered.

The European Atomic Energy Community (EURATOM)

EURATOM was established in 1952 to provide coordinated programs for research into, and the development of, atomic energy in Belgium, France, Italy, Luxembourg, the Netherlands, and West Germany. The Community was administered by a five member commission. Policy decisions were made by a council of ministers representing the respective national governments. The court of justice, the economic and social committee, and the European Parliament were common to EURATOM, ECSC (The European Coal and Steel Community), and EEC (The European Economic Community). Technical advice was provided by the scientific and technical committee and by the consultative committee for nuclear research. The majority of EURATOM employees were workers in the four research centers established in Italy, Belgium, the Netherlands, and West Germany, although EURATOM also sponsored numerous projects of private companies and universities. Three atomic power stations were constructed, health codes for nuclear workers were formulated, and a method for controlling the sale of fissionable materials was enforced through a supply agency.

By 1961, however, several governments had come to doubt the value of the Community. The anticipated shortage of conventional energy had not materialized. An oversupply of fissionable materials made the supply agency unnecessary. The programs instituted had produced energy at extravagant cost. Furthermore, EURATOM's funds were being used to sponsor national programs rather than a community-wide program. By 1970, EURATOM's chief function was that of a disseminator of technical knowledge, doing little to advance European integration. Hope of a successful EURATOM may well have been responsible for Germany's long-delayed ratification of the NPT.

By contrast, the role of the IAEA and of the NPT involved primarily regional considerations leading to integration. The IAEA and the NPT extended the concept to worldwide preoccupation with future economic and social progress in developing nations. One of the preoccupations of the NPT was with the peaceful use of nuclear explosions, but under the aegis of national regimes. A major goal of the NPT was to create a mutual balance of rights and obligations between the nuclear weapon states and the non-nuclear weapon states.

The Non-Nuclear Weapon States Come Together

In August, 1968, the non-nuclear weapon states convened a conference in Geneva under the auspices of the UN, with 96 countries sending delegates. The principal

items of discussion were the security of non-nuclear weapon states, their cooperation in preventing the proliferation of nuclear weapons, and their own unhampered development in the nuclear field, especially their freest possible access to nuclear equipment, material, and data.

Most of the conference participants were dissatisfied with what they termed the lack of balance in the NPT between the respective obligations assumed by nuclear and non-nuclear weapon states. The resolutions adopted called for overall disarmament measures such as the creation of nuclear weapon-free zones, cessation of the production of fissile materials for weapons purposes, and the reduction and elimination of all stockpiles of nuclear weapons. The conferees also sought measures fostering the development of nuclear techniques, especially in developing countries. "To facilitate nuclear projects in developing countries it was proposed that funds be set up under the auspices of the IAEA -- one [fund] would provide special fissionable material, the other would offer grants and low-interest bearing loans." [36]

Provisions of the NPT

Appendix B reproduces the full text of the Treaty. Its main provisions are included in Articles I, II, and III. For the purposes of the Treaty, a nuclear weapon state was defined as one which had manufactured and exploded a nuclear weapon or other nuclear explosive device prior to January 1,

1967. Article I requires that the nuclear weapon states not transfer nuclear weapons or other nuclear explosive devices or control over them to anyone whatever. Spelled out in much detail is the provision that the nuclear weapon states also undertake not to help any non-nuclear weapon state acquire nuclear explosive capacity in any way. Article II requires that non-nuclear weapon states neither acquire atomic weapons or devices nor seek to receive assistance involving such weapons or devices. Article III seeks to ensure these obligations by applying international safeguards through agreements to be concluded with the IAEA.

The remaining articles (IV through VII) seek to ensure that the non-nuclear weapon states have the right to undertake research concerning, and the production and exploitation of, nuclear energy for peaceful purposes; that the benefits of peaceful nuclear explosions be made available to all parties; that the nuclear weapon states pursue further disarmament negotiations in good faith; that member states have the right to conclude regional treaties for the purpose of achieving a total ban on nuclear weapons; and that there be a review of the operation of the Treaty five years after its taking effect.[37]

The NPT finally went into force on March 5, 1970 after ratification by the USSR, UK, USA, and 40 other signatory states. The IAEA Board of Governors set up a Safeguards Committee in 1970 to advise it in regard to the

Agency's duties. As of 1977, some 100 states had either ratified the NPT or acceded to it (see Appendix C for a complete list of these states). Pastinen feels that, in political terms, the NPT has attained a dimension which exceeds its importance as a major arms control measure. "By its genesis and its impact on political relations between states, the NPT has become an integral part of détente, whether we take this to mean a general relaxation of international tensions, the normalization of relations between the major powers or the incipient period of mutual understanding and cooperation in Europe, to which the leading states pledged their nations at the third stage of the Conference on Security and Cooperation in Europe a little more than a year ago in Helsinki."[38]

Pastinen believes that the NPT serves the general interest of the international community and is the best available instrument for promoting that interest. He views it as part of the Law of Nations, a new norm for international life which benefits all nations.

Yet, some individuals and some nations -- including some of those seriously interested in disarmament -- have criticized the Treaty. Typical arguments against it are that it is discriminatory, unbalanced, serves the interests of only some states, and has failed to carry out pledges for further disarmament progress. By way of answering some of these objections, Pastinen points out that the NPT is, at

present, the only instrument of the international community for guarding against the dangers of the further proliferation of nuclear weapons. He maintains that it is the best present means for guarding the general interest; that it has become an integral part of the relaxation of international tensions, that is, of détente; and that the SALT negotiations are a direct outgrowth of Article VI of the NPT.

The NPT Review Conference of 1975

As provided for in Article VIII of the NPT, the Conference to review the operation of the NPT was held in Geneva, Switzerland in May, 1975. Those critical of the Treaty pointed out that only 58 of the 96 states that were parties to the NPT attended the conference. "They failed to point out, however, that all the Parties with significant nuclear activities were among those 58 in attendance."[39]

The Conference had been carefully set up during the course of the three sessions of its preparatory committee. The main purpose of the Conference was to strengthen the Treaty and to ensure its more effective implementation. In this respect, it achieved what might realistically have been expected of it. The Final Declaration of the Conference was essentially a political document, its main thrust being the reaffirmation by the parties of their strong support for the NPT. Major issues were the so-called threshold countries and the question of safeguards in the context of

international trade in nuclear materials.

In Articles I and II, the nuclear weapon states agreed not to transfer ownership of their nuclear weapons to non-nuclear weapon states, and the non-nuclear weapon states agreed not to produce or otherwise acquire them. The Conference was able to confirm that these provisions had been observed faithfully by all parties. If all of the states of the world were parties to the Treaty, guarantees would already exist that ownership of nuclear weapons would be restricted to those five nations also permanent members of the Security Council and which, in that capacity, have a special responsibility for maintaining international peace and security in compliance with the Charter of the United Nations.

However, this situation does not yet obtain. As of August, 1977, the parties to the NPT included three nuclear weapon states (the UK, the USSR, and the USA) and more than 90 non-nuclear weapon nations. About 15 other non-nuclear weapon states had signed the Treaty, but had not yet ratified it. "While the Review Conference was instrumental in bringing forward a considerable number of new and important adherents -- among them five EURATOM countries and Japan -- the Treaty is still far from universal and this naturally reduces its effectiveness."[40]

Of the nuclear weapon states, China and France are outside the Treaty, though France has made a public

declaration that it will refrain from taking any action contributing to the proliferation of nuclear weapons. France has also cooperated with other major suppliers of nuclear materials and equipment with a view to devising common guidelines for regulating exports of these materials, all in the interest of nuclear nonproliferation. "On political grounds, however, France and China have taken a negative attitude toward the NPT."[41]

As already indicated, one weakness of the NPT relates to the threshold states, those at a level of research and industry in peaceful applications of nuclear energy which would make the production of nuclear weapons possible, but which are not parties to the Treaty: states such as Argentina, Brazil, India, Israel, Pakistan, and South Africa. With the increased availability of nuclear energy and its application for peaceful purposes, the number of such threshold countries is very likely to become larger. This situation enhances the risk of a proliferation of nuclear weapons -- unless the threshold countries can be persuaded to join the NPT.

As of early in 1974, the Treaty had achieved its primary goal: there had been no proliferation of nuclear weapons to new states. However, on May 18, 1974, the Indian Atomic Energy Commission announced that it had detonated a peaceful nuclear bomb. This announcement set off a wave of protests, especially on the part of those states which had

most actively supported the Treaty. The widespread concern was not assuaged by the assurances of the Indian government that the explosion was meant only for peaceful purposes and that India had no intention of producing nuclear weapons. "The explosion carried out by India was termed a serious setback to the Treaty and to attempts to prevent the proliferation of nuclear weapons in general."[42]

The basic dilemma of nuclear proliferation is this: How is it possible to satisfy the legitimate aspirations of nations for benefiting from nuclear energy for peaceful purposes while guarding against the dangers of putting its enormous destructive potential in the hands of an ever-growing number of states? A major tool used by the NPT in its efforts to solve this problem was the control mechanism provided in Article III of the Treaty. "Article III, which provides for the IAEA safeguards system, has in fact created the most extensive international control mechanism ever to result from disarmament talks."[43] Its purpose is to guarantee that peaceful nuclear energy is not diverted to nuclear weapons or other nuclear explosives. The Article requires the non-nuclear weapon states which are parties to the Treaty to conclude separate bilateral agreements with the IAEA for implementing the safeguards.

Yet, not all nations are parties to the NPT. Therefore, they are not subject to the IAEA control system, the threshold countries already mentioned being a case in

point. The Director General of the IAEA, Dr. Sigvard Eklund, as well as the majority of the states at the Review Conference, suggested that members of the NPT exporting nuclear materials and equipment should require the application of safeguards to the complete nuclear fuel cycle of the importing countries as a supply condition. "The enforcement of such a condition would guarantee that Parties to the NPT do not contribute either by commission or omission to the spread of nuclear explosive capacity in contravention to the spirit of the NPT."[44]

Pastinen asks why it has been so difficult to agree on nuclear supply policies which would leave no loopholes for the proliferation of nuclear weapons. He cites as the most obvious reason the economic interests involved in nuclear trade and commercial competition between different suppliers. In order to equalize the situation and to give supplier states an economic incentive to act in the interest of nonproliferation, the Finnish government put forward a suggestion that common export requirements recommended by the Review Conference be complemented by common import requirements. Parties to the NPT could consider committing themselves not to import nuclear materials and nuclear equipment from nations not parties to the NPT, or which had not accepted full cycle safeguards, or which had not otherwise demonstrated responsible export policies. In effect, any element of distortion of competitive market

conditions would thereby probably be eliminated. Placed at a premium would be those suppliers acting in the interest of nonproliferation. President Carter, in a speech on May 13, 1976, when he was campaigning for the presidency, expressed support for the Finnish proposal:

> The recent initiative of the Finnish government along these lines deserves commendation. The Finns have urged a compact among the purchasers of nuclear fuel and technology to buy only from suppliers who require proper safeguards on their exports.[45]

Thus, diplomacy sometimes comes to rely purely on economics. Even though conflicting political and social ideologies might cause lack of cooperation, indirect economic coordination by member nations of the IAEA or of the NPT could be used to implement desired nuclear policies. Members of the Treaty are bound not to provide materials to threshold or other countries without proper safeguards. Nonsignatories of the Treaty can be influenced by applying pressures such as those cited by Carter and in the Finnish proposal. However, diplomacy in itself must not be discarded. Through negotiations, the IAEA has concluded numerous agreements concerning the control of atomic energy. The IAEA's delicate negotiations with EURATOM were most instrumental in inducing the EEC nations (all except France) to join the NPT.

Accordingly, in the Review Conference provided for by the NPT (see Appendix D for a detailed summary of the Conference), the Finnish government recognized the increased

danger of a proliferation in nuclear weapons involved in the accelerated spread and development of peaceful applications of nuclear energy, and offered a resolution eventually approved by the 31st session of the General Assembly of the United Nations in 1976. Pastinen summarizes the Resolution:

> The Resolution recognizes that states accepting effective non-proliferation restraints have a right to enjoy fully the benefits of the peaceful uses of nuclear energy and underlines the importance of increased efforts in this field, particularly for the needs of the developing areas of the world.
>
> The Resolution requests the International Atomic Energy Agency to give special attention to its program of work in the non-proliferation area, including its efforts in facilitating peaceful nuclear cooperation and increasing assistance to the developing areas of the world within an effective and comprehensive safeguards system.
>
> The Resolution further requests the International Atomic Energy Agency to continue its studies on the questions of multinational fuel cycle centers and an international regime for plutonium storage as effective means to promote the interests of the non-proliferation regime.
>
> The Resolution calls upon the International Atomic Energy Agency to give careful consideration to all relevant suggestions aiming at strengthening the safeguards regimes that have been presented to the Agency.
>
> The Resolution requests the International Atomic Energy Agency to report on the progress of its work on this question to the General Assembly at its thirty-second session.[46]

Pastinen regards this Resolution as an expression of the political will of the greater part of the international community, favoring the NPT goals. He also sees it as a summons to the IAEA to strengthen its nonproliferation activities in the crucial field of safeguards.

Activities by the IAEA have justified this confidence. The Safeguards Committee established in 1970

summarized its position in a "Blue Book" which included the recommendation that the IAEA system of safeguards interlock with various state systems. The IAEA's verification activities in the 1970's have included independent measurements and observations, monitoring the flow of material not only within a plant but also from plant to plant. In 1972, the Agency concluded 37 agreements with various states involving safeguards agreements. The Board of Governors tried to intensify plans for the protection of the environment and the safe management of nuclear waste. In 1973, a nuclear power market survey in developing countries was carried out by the IAEA for 14 countries requesting participation. The IAEA served, for the first time, as a channel for the supply of nuclear fuel for power reactors. The Agency began studying the use of regional nuclear fuel cycle centers for reprocessing nuclear fuel and for waste management. The 1975 Review Conference expressed strong support for IAEA safeguards and reaffirmed the need for making the benefits of the peaceful applications of nuclear technology, including peaceful nuclear explosions, available to all member nations of the NPT. In 1977, a set of safety codes and guides for nuclear power plants was prepared by the IAEA, which was provided with a new data base management system for handling safeguards data by the Federal Republic of Germany.[47]

The IAEA's Mission: Future Outlook

While the second review conference on the NPT is not due for another two years (1980), its problems agenda is already evident. With respect to the problem of nuclear energy, safety and economic viability will be the two main concerns, the emphasis being on safeguards, physical protection, and regional nuclear fuel centers.[48] Rising costs are also a consideration. Forecasts based on the Agency's 1975 estimates are shown in Table 1.

The future will probably be marked by a deep uncertainty about the use of nuclear power, the reprocessing of spent fuel, and the disposal or storage of nuclear wastes. As reflected by Table 1, there is an increasing resistance to individual nuclear power plants, and orders for new nuclear power stations have declined. The use of nuclear power is becoming a major political issue in certain member states of the NPT. However, the nuclear power industry has continued to maintain its excellent safety record. "At the end, as at the beginning, of 1976, it was true to say that no fatal or serious accident deriving from the nuclear side of any power plant had occurred since the start of operation of the first nuclear station more than twenty years before."[49]

The main development trends will probably include the refinement of the technical objectives of safeguards, the standardization of procedures, and the strengthening of

Table 1

Forecast of Installed Total Electric and Nuclear Capacity (in Thousands of MW)[a]

	1974	1975	1980	1985	1990	2000
Electrical	1500	1600	2300	3200	4500	8900
Nuclear	62.8	82	220-250	460-850	1300-1900	3600-5300
Percentage Share of Nuclear	4.0	5.6	10-11	18-27	29-42	40-60

[a]IAEA Annual Report, July 1, 1974--June 30, 1975, p. 32.

safeguards requirements in connection with exports. There will be increasing international concern with terrorist activities. As early as 1972, the Agency issued recommendations concerning measures to be applied for the physical protection of nuclear material in use or storage within a state during national or international transit.[50]

Regional nuclear fuel centers are being planned. International cooperation on a regional basis has been studied by the Agency since 1975. Prices for materials will probably continue rising, and more requests can be anticipated for technical and safety assistance. The increased application of nuclear science and techniques to food and agriculture, medicine, and the development of water resources can be expected. There will be increasing concern about environmental impact.

Tape considers the next 20 years as favorable to the development of nuclear fission as a source of energy. With respect to the IAEA, he describes its role in this manner:

> The IAEA must continue to serve the needs of its members. This will of necessity mean continuation of a diverse program serving nations at all stages of nuclear development.
>
> Nuclear energy and its applications will continue to be the dominant theme of the IAEA since it is the one international body to which responsibility for that subject has been assigned.
>
> The core programs of technical assistance, informational and promotional services, and safeguards will continue though changing in degree and detail to meet the current needs of its members.
>
> Experience and success to date suggest that it will be unlikely that a better forum than the IAEA could be established for bringing together east-west-north-south on nuclear energy issues.[51]

Tape stresses the importance of developing the indigenous capability for building and utilizing the new technology, and that technical assistance must become an integral part of a well-thought-out domestic program. He expects diversification of the resources used and of national origins of supplies. A variety of technologies is urged by him, including solar energy. He sees the need for new institutional mechanisms involving the IAEA. These will include technical assistance, informational programs, new initiatives to minimize the risks of diversion, and nuclear waste management.

> The role of the IAEA in world affairs is destined to increase markedly over the next twenty years . . . . The IAEA as an institution has flexibility . . . . The IAEA safeguards system is an excellent example of how, through the relinquishment of some national sovereignty, an international system has been established to achieve an objective that was not otherwise attainable.[52]

Falk, in discussing the trend toward a world community, lists a number of principal objectives especially pertinent to any serious thought on the subject of world order.[53] One of these is the containment of large scale international violence and the regulation of the multiple technologies of mass destruction and mass manipulation. It is especially significant that the IAEA has more than two decades of experience with these objectives. Another objective mentioned by Falk is the need for an international, integrated welfare system concerned with the maintenance of minimum living standards and with the

reduction of economic disparities between the rich and the poor. While the IAEA is not specifically a welfare agency, it has shown concern for the needs of the Third World and underdeveloped nations throughout its long history of negotiations.

In summary, the IAEA represents an elaborate structure that has evolved through considerable experience and which will continue evolving. Its membership includes 100 of the world's most varied nations in the social, political, and economic sense. For many years, it has had access to the internal systems of nations for the purpose of inspecting certain facilities. Its role as inspector of atomic facilities and materials can be extended to other areas of inspection. Its close cooperation with the UN and related organs gives it potential for great scope in its activity. Its plans for regional development of atomic energy installations can serve as a model for other regional political, economic, and social planning. Its extensive service in successfully safeguarding atomic installations in dozens of countries has provided it with a background of experience that is unique and not possessed by any other international agency. Its various programs are both scientific and humanitarian, and are carried out on an international scale by IAEA representatives with a jurisdiction that is accepted by individual states. These and other characteristics, which will be presented in

greater detail in succeeding chapters, make the IAEA an ideal candidate for a model of world order.

Footnotes

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3. International Atomic Energy Agency, 20 Years: International Atomic Energy Agency, 1957-1977 (Vienna: IAEA, September, 1977), p. 3.

4. Goldschmidt, "Origins of International Atomic Energy Agency," p. 13.

5. Ibid., p. 14.

6. Ibid.

7. Bernard Baruch, Baruch: The Public Years (New York: Holt, Rinehart and Winston, 1960), p. 360.

8. Ibid.

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33. International Atomic Energy Agency, A Short History of Non-Proliferation (Vienna: IAEA, February, 1976), p. 8.

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44. Ibid.

45. James E. Carter, Jr., quoted in Pastinen, "Nuclear Proliferation and the NPT," p. 35.

46. Ibid., pp. 36-37.

47. IAEA, 20 Years, pp. 62-80.

48. IAEA, Short History of Non-Proliferation, p. 36.

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52. Ibid., p. 46.

53. R. A. Falk, "The Trend Toward World Community: An Inventory of Issues," in The Search for World Order, eds. A. Lepansky et al. (New York: Appleton, Century and Crofts, 1971), p. 354.

CHAPTER IV

THE DECISION-MAKING APPARATUS OF THE IAEA

The three main organs of the IAEA are the General Conference, the Board of Governors, and the Secretariat.

The General Conference consists of all member states, each with one vote. In 1977, the IAEA consisted of 110 member states.[1] Special sessions may be convened by the Director General at the request of the Board of Governors or of a majority of the IAEA members. Ordinarily, the General Conference convenes once a year. It debates the Agency's policy and program, approves the budget, approves applications for membership, elects new members, and places new members on the Board of Governors. It also approves reports for submission to the UN, discusses any pending matter concerning the IAEA, and is empowered to take recommendations to the Board of Governors or to any of the member states.

The Board of Governors is invested with the authority to carry out the functions of the Agency. The Board meets about four times a year. Twelve of the Board members are designated by the Board itself, with the

remaining 22 members elected by the General Conference. Membership criteria include level of sophistication in nuclear technology and equitable geographic representation. The Board always includes 5 representatives of Latin America, 4 representatives of Western Europe, 3 representatives of Eastern Europe, 4 representatives of Africa, 2 representatives of the Middle East and South Asia, 1 representative of Southeast Asia and the Pacific, 1 representative of the Far East, and 2 additional members from various Middle Eastern, Asian, and Pacific areas. As the executive organ of the Agency, the Board considers major questions such as membership applications, the Agency's work program, safeguards agreements, and safety standards. It either approves or disapproves the annual budget and report.

A listing of major powers represented in the Board of Governors of the IAEA reveals immediately that the names of these countries are those who are also normally identified as major powers -- militarily, politically and economically. Thus, the United States and the Soviet Union have representatives on the Board of Governors, representing the world's two most powerful military nations. The United Kingdom, Canada and France, while considerably lesser military powers, still are representatives of the "nuclear club" nations. Major economic powers are represented by such industrial giants as West Germany and Japan, and the lesser developed countries form, collectively, a

considerable political power. However, a complete listing of the nationalities of all members of the Board quickly reveals the statutory geographical balance as outlined above, and prescribed by Article IV.A/1 and 2 of the IAEA Statute. It is this provision especially which significantly reduces the formation of "blocs" so prevalent in the UN General Assembly, yet steers clear of the veto-power's incapacitating effects often experienced in the Security Council.

A matter of particular urgency of relevance to all Member States is that of long-term energy planning. Beyond that, the interests of the major powers are predictably clear and may be categorized broadly as twofold. First, they are the main suppliers of a very expensive commodity -- fissionable materials -- and so support the widest development and application of nuclear energy for peaceful purposes. Second, they have an overriding interest in non-proliferation of nuclear weapons since that poses a threat to all mankind, even the military giants, or perhaps particularly them. Thus, there exists a dilemma, which in turn serves to strengthen support of the IAEA's statutory provisions on safeguards and control. On the other hand, major powers support nuclear technology distribution and development to further the well-being of mankind generally and the underdeveloped states of the world particularly, with a view toward eradicating hunger and poverty, long

recognized as significant destabilizing factors to world peace. These major powers, and particularly those possessing nuclear weapons, are dedicated to and do fully support all control and inspection measures of the IAEA Statute and its many agreements concluded pursuant to the provisions of the Treaty for Non-Proliferation of Nuclear Weapons (NPT). These powers are the driving force behind improved waste management techniques, quality assurance and standardization, research and development and studies on risk assessment.

The Secretariat consists of 400 professional and more than 800 general service staff members. It is headed by the Director General who is responsible for the administration and implementation of the Agency's program. He is appointed by the Board of Governors, with the approval of the General Conference, for a term of four years. The IAEA statute provides that the Director General is subject to control by the Board and that he is responsible for the appointment, organization, and functioning of the staff. The staff includes four Deputy Directors General, each of whom is head of a department (Administration, Research and Isotopes, Technical Assistance and Publications, and Technical Operations), and an Inspector General who is head of the Department of Safeguards and Inspection. At present, 12 distinguished scientists, appointed for three year terms and representing all major fields of nuclear science, advise

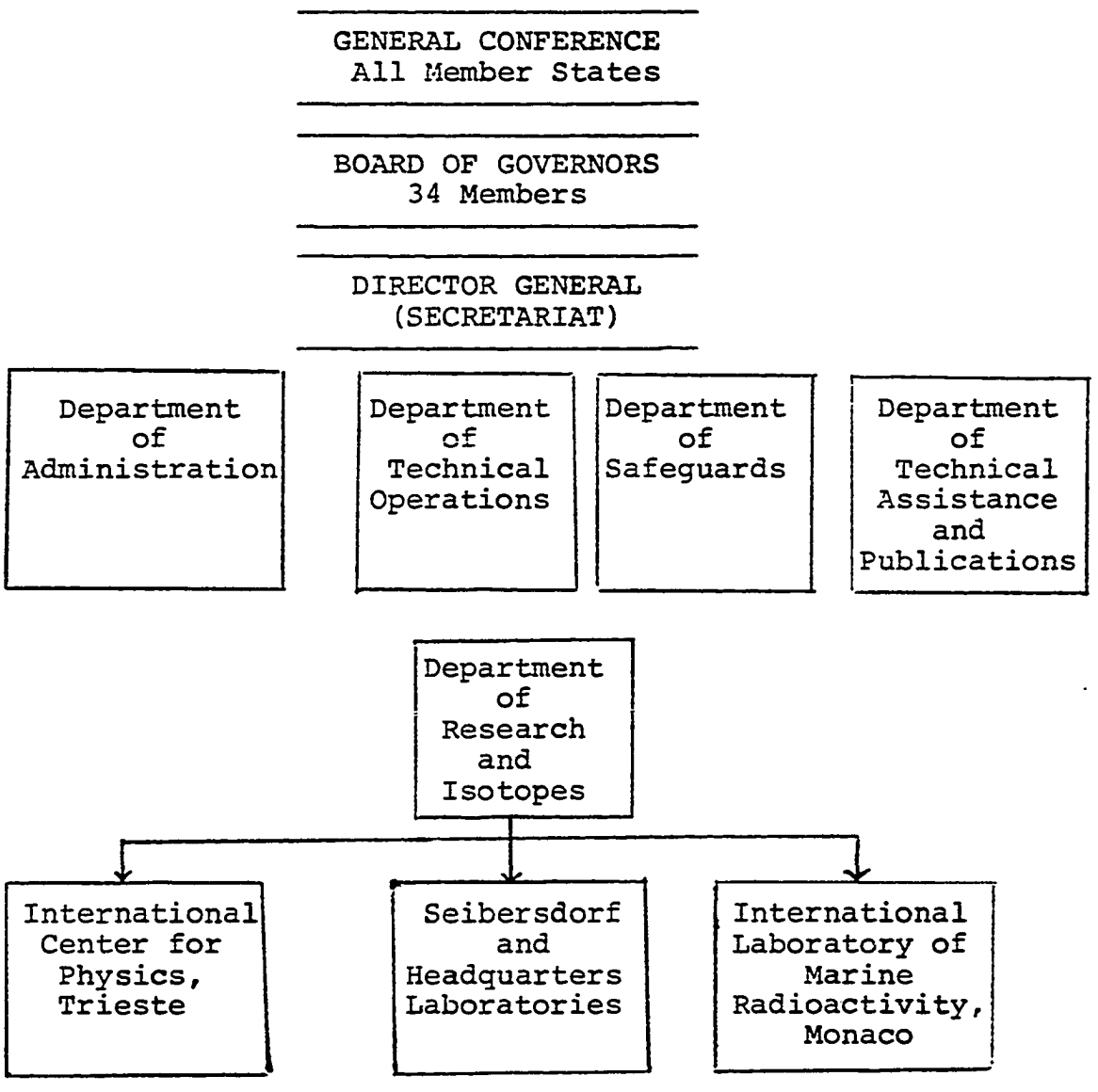
the Director General in regard to scientific and technical matters. The Standing Advisory Group on Safeguards and Implementation (SAGSI) offers advice on technical aspects of safeguards.[2] Figure 5 shows the overall organizational structure of the IAEA.

Not shown in Figure 5 is the important Scientific Advisory Committee. This committee meets about twice a year to advise the Director General, and through him the Board of Governors, on specific scientific and technical questions with the IAEA's program. Members of the Committee are scientists of international eminence. The committee is independent of the IAEA Secretariat and is appointed by the Director General with the approval of the Board of Governors. In 1977, the members of the Committee represented the United States of America, Brazil, Israel, Egypt, France, Japan, Canada, the Federal Republic of Germany, the United Kingdom of Great Britain and Northern Ireland, the Union of Soviet Socialist Republics, India, and Hungary.[3]

Other important standing committees are the Technical Assistance Committee and the Administration and Budget Committee set up by the Board of Governors in 1959. All member states represented on the Board may join these committees. About 40 other advisory groups on specific problems meet each year.[4]

Figure 5

Organizational Structure of the International Atomic Energy Agency[a]



[a]Adapted from IAEA, 20 Years: International Atomic Energy Agency, 1957-1977 (Vienna: IAEA, September, 1977), p. 82.

The IAEA Position in the UN and Other Systems

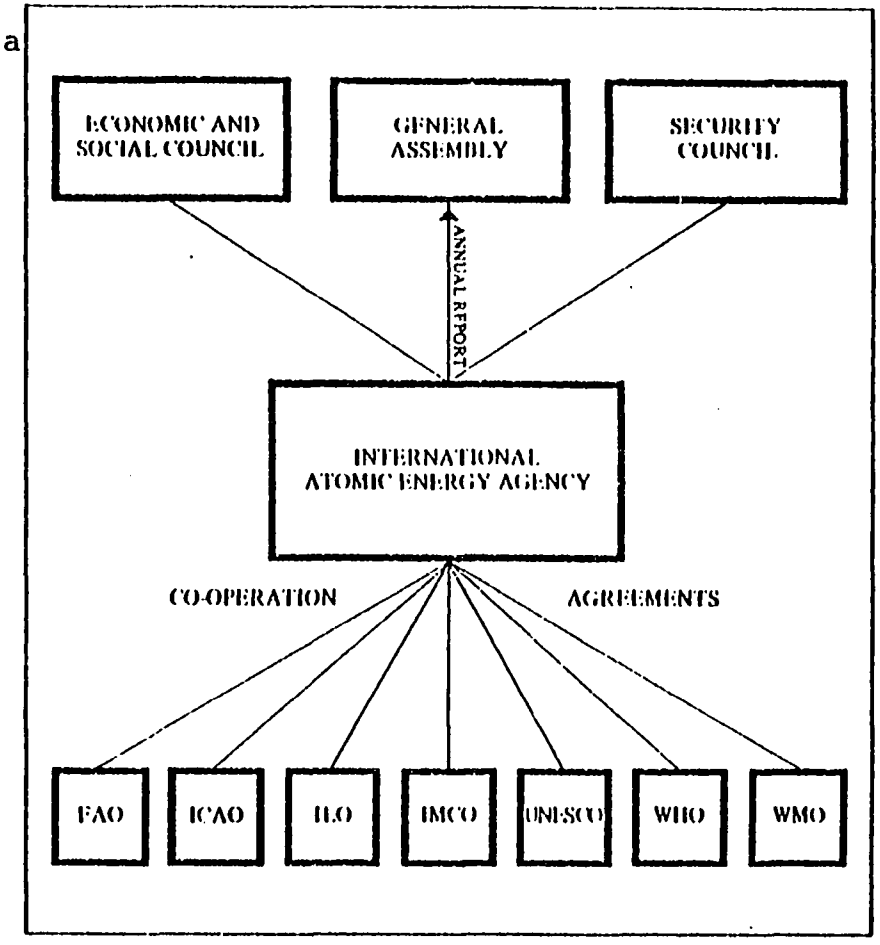
The IAEA is an autonomous international organization. It occupies its own position in the UN family of organizations, as outlined in Figure 6. By statutory agreement with the UN, the IAEA is held responsible for international activities aimed at the peaceful uses of atomic energy and for seeing to it that none of the assistance it gives is used to further military purposes of any kind. In case of noncompliance with, or violations of, these goals, the Board of Governors reports the situation to the Security Council and to the General Assembly of the United Nations.

At its tenth session in 1955, the General Assembly, *inter alia,* established, in Resolution 913 (X), the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and requested the Secretary-General to study the question of the relationship of the proposed international atomic energy organization with the United Nations. In September 1956, the Conference on the Statute of the IAEA took place at the United Nations Headquarters and the IAEA Preparatory Committee performed most of its work there. Soon after the entry into force of the Agency's Statute, a relationship agreement was approved by the IAEA's Board of Governors and General Conference in October 1957 and by the United Nations General Assembly a month later.

In view of the unique nature of the IAEA's functions

Figure 6

RELATIONS OF THE IAEA WITH THE UN[a]



FAO
Food and Agriculture Organization of the United Nations

ICAO
International Civil Aviation Organization

ILO
International Labour Organisation

IMCO
Inter-Governmental Maritime Consultative Organization

UNESCO
United Nations Educational, Scientific and Cultural Organization

WHO
World Health Organization

WMO
World Meteorological Organization

[a]From IAEA, 20 Years: International Atomic Energy Agency, 1957-1977 (Vienna: IAEA, September 1977), p. 84.

under the terms of its Statute, the Agency's relationship with the United Nations assumed a position unlike that of the specialized agencies within the United Nations family of organizations. Thus, the IAEA, although it submits reports to the Economic and Social Council (ECOSOC), reports primarily to the General Assembly directly, and may also report to the Security Council whenever necessary.

Since the entry into force, in 1970, of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), which in Article III requires all non-nuclear weapon States Party to the Treaty to accept IAEA safeguards, the Agency has assumed the critical role of applying these safeguards in order to enhance the confidence of States that nuclear materials are not used for purposes proscribed by the Treaty. This function constitutes a significant recognition of the confidence that States have in the integrity and impartiality of the IAEA and enables the Agency to make a valuable contribution to the maintenance of international peace and security. The IAEA, furthermore, collaborated with the Conference of the Committee on Disarmament in 1975 in the preparation of the Comprehensive Study of the Question of Nuclear-Weapon-Free Zones in all Its Aspects and assisted the United Nations Secretariat in providing secretariat services and preparing documentation for the 1975 NPT Review Conference.

The IAEA has a special, direct link to the UN

Security Council. Article XII of the Statute provides for IAEA inspections to determine compliance with Agency promulgated safeguards. Inspectors report non-compliance to the Director General who, in turn, must report to the Board of Governors on the incident. The Board calls upon the violator to take immediate remedial action. Failing to comply results in the Board's reporting the violator and the particulars of the incident to the UN Security Council and to the General Assembly of the UN. Further disciplinary action by the IAEA is limited to suspending the non-complying member from exercising the privileges and rights of membership (such as receiving further materials, technology or expert assistance). Article 34 of the UN Charter gives the Security Council the power to investigate disputes which might lead to international friction, and Article 39 empowers it to determine any threat to the peace, or acts of aggression, and to decide what measures ought to be applied against a violator. Thus, while the IAEA lacks coercive powers as such, its special link to the Security Council provides it with direct access to that body's full measure of influence in settlement of disputes involving its members. Moreover, the Statute and the Charter make provisions for access to the International Court of Justice for opinions and/or settlement of disputes by arbitration.

As shown in Figure 6, the Agency has agreements with seven specialized agencies of the UN (UNESCO, ILO, WHO, WMO,

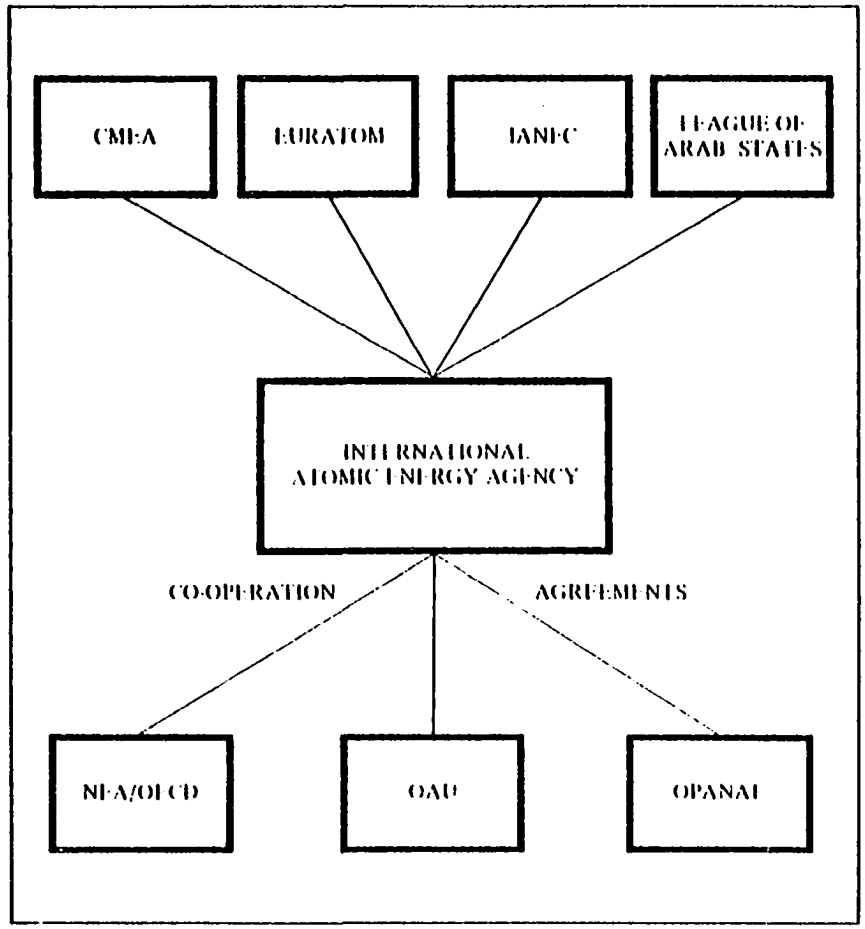
ICAO, FAO, and IMCO). Cooperative agreements have also been instituted with various organizations not a part of the UN system (see Appendix E) but which are concerned with the peaceful uses of atomic energy. Figure 7 shows that these include the Inter-American Nuclear Energy Commission (IANEC), the Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL), the League of Arab States, the Organization of African Unity (OAU), the Nuclear Energy Agency (NEA) of the Organization for Economic Cooperation and Development (OECD), the Council for Mutual Economic Assistance (CMEA), and the European Atomic Energy Commission (EURATOM). The IAEA maintains contact, and has working relations with, 19 nongovernmental organizations which have consultative status with the Agency.

The IAEA Budget

The IAEA budget is funded through regular and voluntary contributions from member states. Figure 8 shows the regular IAEA budget for the years 1958-1977. The General Conference adopted a 1977 budget on the order of $43,501,000.5 The goal for voluntary contributions to finance the IAEA program of technical assistance was $4.5 million for 1975 and $5.5 million for 1976. Actually, only about 92 percent of the $5.5 million goal was pledged, with about 65 percent of the members making pledges.

The resources made available to the Agency for carrying out technical assistance programs during the period

Figure 7



RELATIONS OF THE IAEA WITH INTERGOVERNMENTAL ORGANIZATIONS[a]

CMEA
Council for Mutual Economic Assistance

EURATOM
European Atomic Energy Commission

IANEC
Inter-American Nuclear Energy Commission

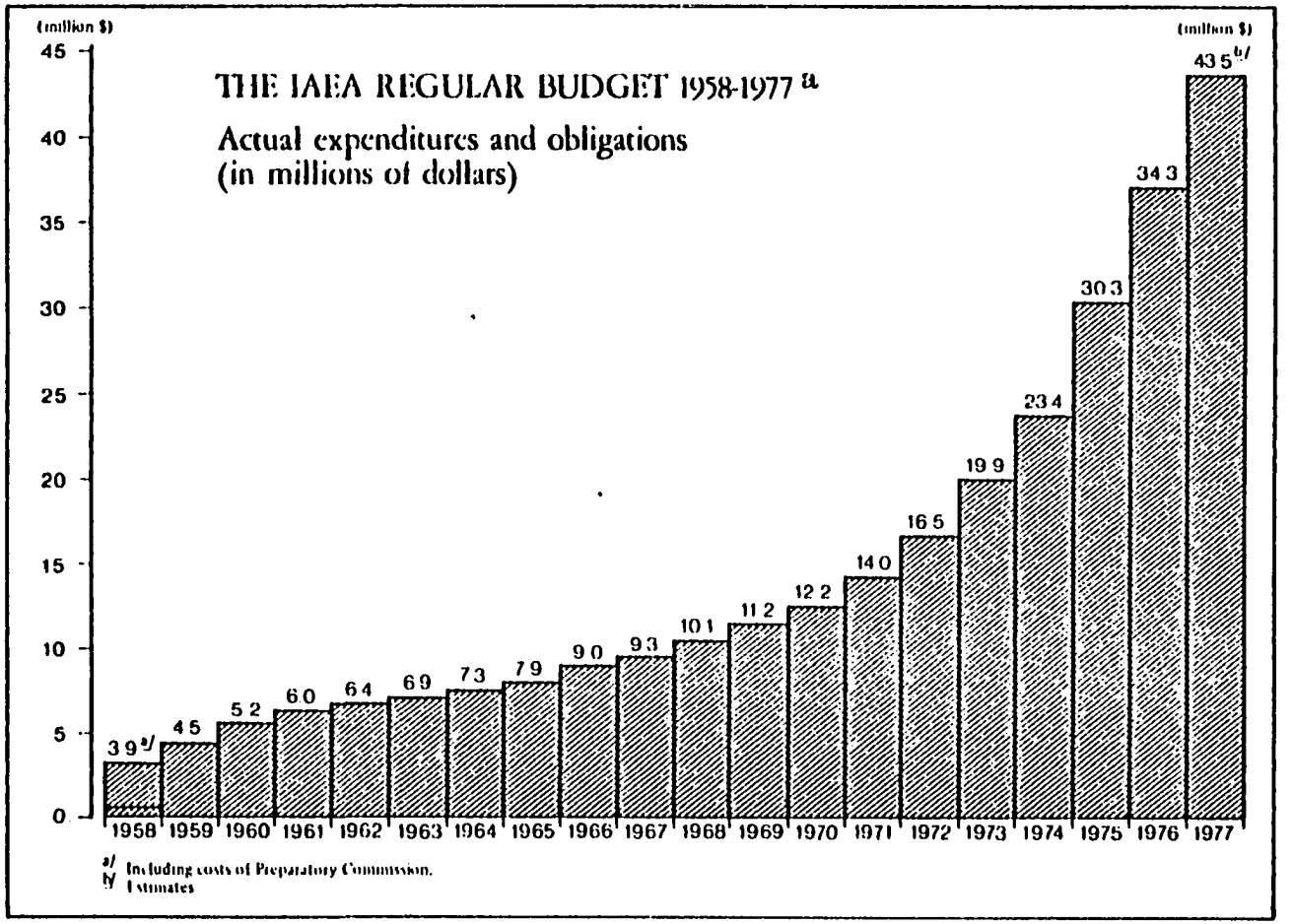
NEA/OECD
Nuclear Energy Agency of the Organisation for Economic Co-operation and Development

OAU
Organization of African Unity

OPANAL
Agency for the Prohibition of Nuclear Weapons in Latin America

[a]From IAEA, 20 Years: International Atomic Energy Agency, 1957-1977 (Vienna: IAEA, September 1977), p. 85.

Figure 8



[a]From IAEA, 20 Years: International Atomic Energy Agency, 1957-1977 (Vienna: IAEA, September 1977), p. 88.

1958-1977 are shown in Figure 9. Funds were provided from three sources: the IAEA itself, monetary assistance in kind to member states, and the United Nations Development Program (UNDP).

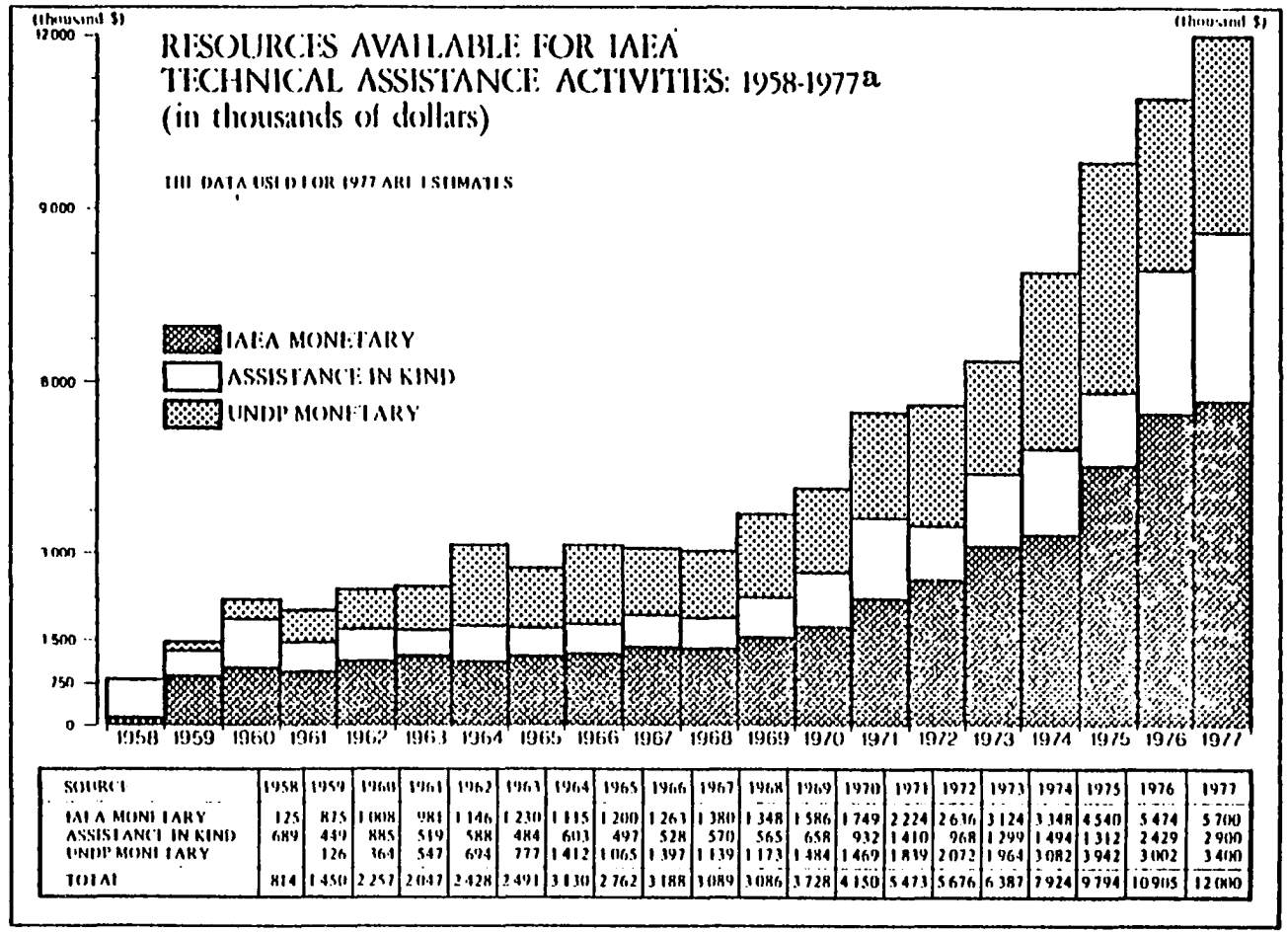
Three types of assistance are being provided to diverse regions of the world. Figure 10 shows that technical assistance during the period 1958-1977 was for experts, equipment, and fellowships. Figure 11 shows the distribution of IAEA technical assistance by region. Enumerated according to how much assistance they received during the 1958-1977 period, the regions are Asia and the Pacific, Europe, Latin America, Africa, "Interregional," and the Middle East.

Cooperation by member states in the form of voluntary contributions has recently been good. Table 2 shows that, in 1975, about 70 percent of all IAEA members pledged voluntary contributions, resulting in more than 93 percent of the target figure of $4.5 million being met. Similarly, in 1976, while only 65 percent of all member nations pledged voluntary contributions, these contributions represented more than 91 percent of the $5.5 million target figure.

The IAEA Role in International Cooperation

In the exchanges at the first International Conference leading to the creation of the IAEA, a firm foundation of international cooperation was laid. It was

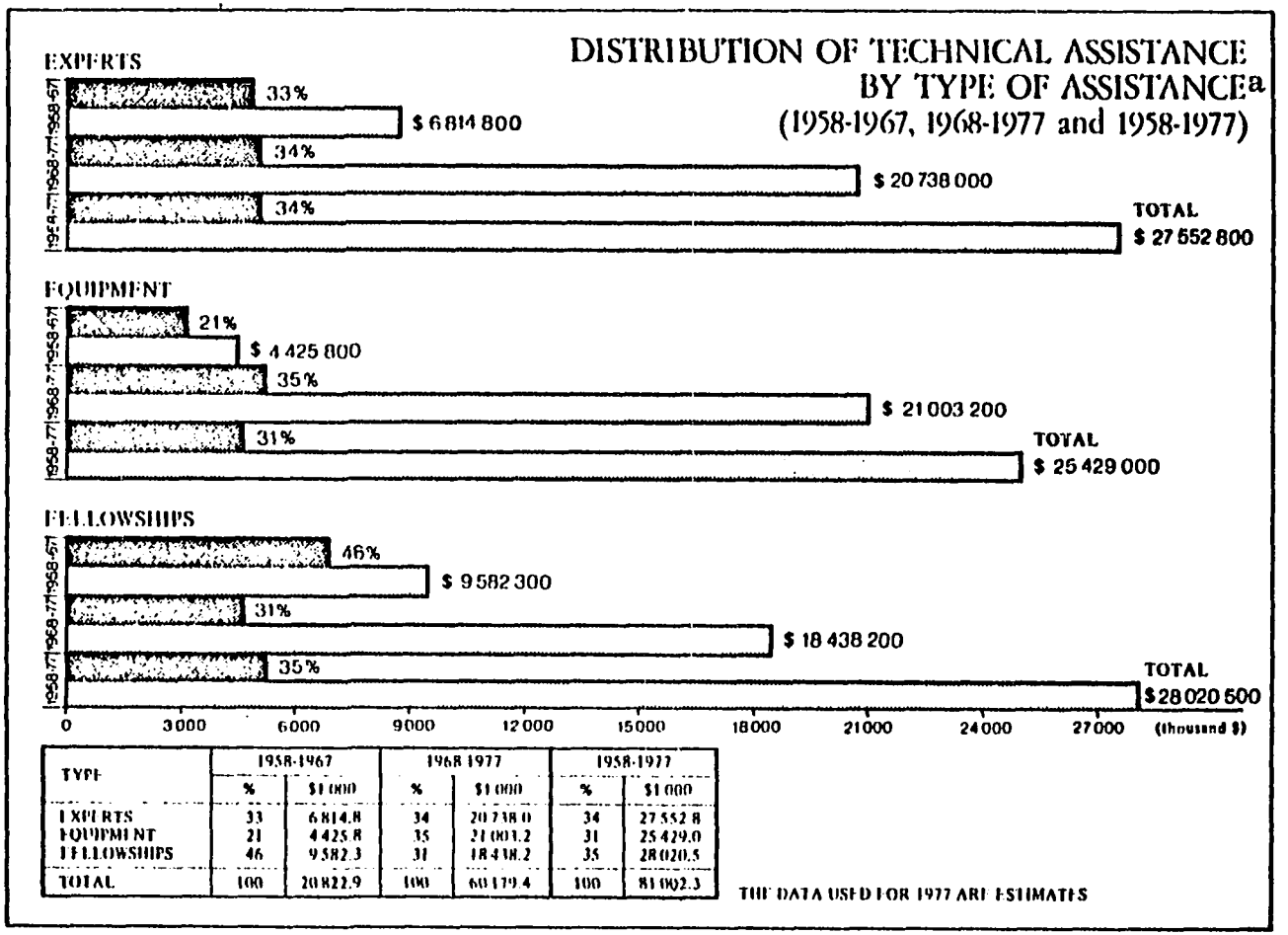
Figure 9



SOURCE	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
IAEA MONETARY	125	875	1 008	981	1 146	1 230	1 815	1 200	1 263	1 380	1 348	1 586	1 749	2 224	2 636	3 124	3 348	4 540	5 474	5 700
ASSISTANCE IN KIND	689	449	885	519	588	484	603	497	528	570	565	658	932	1 410	968	1 299	1 494	1 312	2 429	2 900
UNDP MONETARY		126	364	547	694	777	1 412	1 065	1 397	1 139	1 173	1 484	1 469	1 839	2 072	1 964	3 082	3 942	3 002	3 400
TOTAL	814	1 450	2 257	2 047	2 428	2 491	3 830	2 762	3 188	3 089	3 086	3 728	4 150	5 473	5 676	6 387	7 924	9 794	10 905	12 000

[a]From IAEA, 20 Years: International Atomic Energy Agency, 1957-1977 (Vienna: IAEA, September 1977), p. 89.

Figure 10

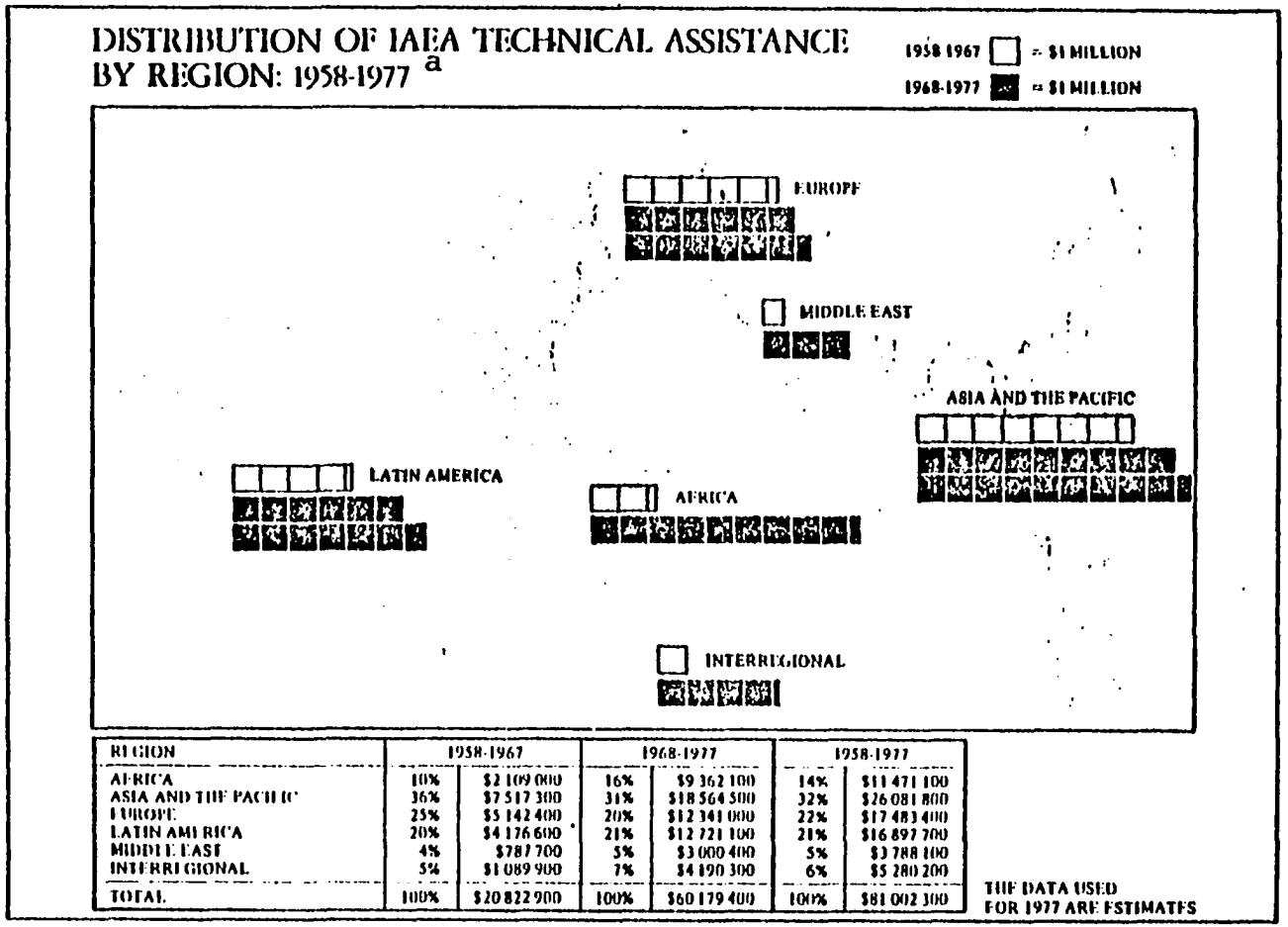


TYPE	1958-1967		1968-1977		1958-1977	
	%	$1 000	%	$1 000	%	$1 000
EXPERTS	33	6 814.8	34	20 738.0	34	27 552.8
EQUIPMENT	21	4 425.8	35	21 003.2	31	25 429.0
FELLOWSHIPS	46	9 582.3	31	18 438.2	35	28 020.5
TOTAL	100	20 822.9	100	60 179.4	100	81 002.3

THE DATA USED FOR 1977 ARE ESTIMATES

[a]From IAEA, 20 Years: International Atomic Energy Agency, 1957-1977 (Vienna: IAEA, September 1977), p. 90.

Figure 11



REGION	1958-1967		1968-1977		1958-1977	
AFRICA	10%	$2 109 000	16%	$9 362 100	14%	$11 471 100
ASIA AND THE PACIFIC	36%	$7 517 300	31%	$18 564 500	32%	$26 081 800
EUROPE	25%	$5 142 400	20%	$12 341 000	22%	$17 483 400
LATIN AMERICA	20%	$4 176 600	21%	$12 721 100	21%	$16 897 700
MIDDLE EAST	4%	$787 700	5%	$3 000 400	5%	$3 788 100
INTERREGIONAL	5%	$1 089 900	7%	$4 190 300	6%	$5 280 200
TOTAL	100%	$20 822 900	100%	$60 179 400	100%	$81 002 300

THE DATA USED FOR 1977 ARE ESTIMATES

[a]From IAEA, 20 Years: International Atomic Energy Agency, 1957-1977 (Vienna: IAEA, September 1977), p. 91

Table 2

Voluntary Contributions: 1967-1976[a]

Year	Established Target[b]	Percentage of Target Achieved	Percentage of Members Pledging
1967	2.0	71.6	63.3
1968	2.0	71.2	63.6
1969	2.0	74.4	66.7
1970	2.0	83.6	70.9
1971	2.5	85.7	69.6
1972	3.0	82.8	69.6
1973	3.0	94.9	67.3
1974	3.0	102.8	61.9
1975	4.5	93.8	70.8
1976	5.5	91.7	65.5

[a]Adapted from IAEA, The Annual Report for 1976 (Vienna: IAEA, July 1977), p. 9.

[b]In millions of dollars.

here that observers, especially from the underdeveloped nations, perceived the great benefits which the new organization could bring them.

The IAEA has become the recognized vehicle for international cooperation in the atomic energy field. It is autonomous, yet works in close cooperation with specialized agencies within the UN and with governmental agencies. It has greater contact powers than do other UN agencies. For example, whereas the other agencies of the UN report to the Economic and Social Council of the UN (ECOSOC), the IAEA is required by its Statute to report annually to the General Assembly and, when appropriate, also to the Security Council.

Like other specialized UN agencies, the IAEA is concerned with providing advice and assistance to its members by acting as a channel between them, or by sending them expert members of its own staff at their request. "Since it has access to information from research centers in every part of the world, it is in a unique position to act as a center for the collection and dissemination of all types of information in its field; in particular, it provides such information for the less developed countries."[6]

In carrying out its routine functions, the IAEA cooperates with other members of the UN family in their special fields. For example, safety and health standards in

nuclear industries are discussed with the World Health Organization and with the International Labor Organization. There is a regular information exchange between the IAEA and the United Nations Scientific Committee on the Effects of Atomic Radiation, concerning environmental contamination and the effects of radiation exposure. The IAEA cooperates closely with the Food and Agricultural Organization about the use of atomic energy in agriculture. Many scientific conferences and seminars are organized jointly by the IAEA and UNESCO.[7]

Because of the problems connected with atomic energy, some of the specialized UN agencies have sections within their own offices concerned primarily with the IAEA. For instance, the FAO organizes meetings and seminars with the atomic energy agencies of member states concerning such things as radioisotopes in agriculture or the use of radiation in preserving food. WHO is also concerned with radiomedicine and with the human aspects of radiobiology. Wherever atomic energy or its effects impinge on the international field, one or another of the UN members is directly involved.

The IAEA has collaborated extensively with the UN in convening various international conferences on the peaceful use of atomic energy. "The United Nations has supported the convening by the IAEA this year in Salzburg of what was in effect the fifth in that series of international scientific

gatherings."[8] The two bodies have cooperated on projects as varied as uranium exploration, energy production, agricultural expansion and modernization, food preservation, and health and industrial promotion. The United Nations Development Program (UNDP) has supported more than 200 projects in developing countries in the field of nuclear energy, for which the IAEA is the executing agency. In carrying out its functions, the IAEA has gained the confidence and trust of its member states, making it a valuable contribution to the maintenance of international peace and security.[9]

In retrospect, the need for some kind of international organization to coordinate work in the peaceful applications of atomic energy led to establishment of the IAEA. In addition to acting as a clearinghouse for information and expertise between the atomic powers and other nations, the Agency has played a major role in continuing international cooperation with respect to the many aspects of nuclear power. Other UN bodies, particularly the specialized agencies, cooperate closely with the IAEA. "International cooperation, through the various members of the UN family, is an essential part of the development of atomic energy for peaceful purposes."[10]

The Process of Agreement

In the United Nations, there are a number of major voting and representational schemes. The General Assembly

represents a democratic scneme in the sense that each member state has one vote. In the World Bank, voting power is weighted; voting power is proportional to share holdings. In the Security Council, power politics exists in the form of the veto power. Each of these voting schemes is keyed to the particular organization's purpose and functions.

In the IAEA, the General Conference is the analogue of the General Assembly, with each member state having one vote. The Board of Governors is controlled by the General Conference, which names 22 of its 34 members. The Board of Governors, in turn, appoints the Director General, so that there is a well connected chain of authority going all the way back to the Conference. This structure is appropriate because the IAEA is designed primarily as an executive organ, and lines of administration and control are clearly designated.

In such a structure, the balance of power with democratic accountability is clear. The Director General can, from a practical standpoint, be removed by the Conference which has the authority to remove almost two thirds of the Board of Governors. The Conference can withhold funds and reject an appointment of the Director General by the Board. The Board and the Secretariat are primarily executive arms of the IAEA, subject to extensive control and supervision by the Conference.

The form of representation on the Board represents

an especially significant contribution to world democracy. Certain regions of the world are automatically allotted a fixed number of representatives on the Board. The Third World and poorer nations are well represented, providing for a balance of power through voting rights. Specifically, Article VI of the Statute provides that each member of the Board shall have one vote. Decisions on the amount of the Agency's budget are made by a two-thirds majority of those present and voting (financial questions are decided on by the General Conference, and require a two-thirds majority of those present and voting). Decisions on other questions, to include procedural questions or categories of questions to be decided upon by two-thirds majority vote, are made by a simple majority of those present and voting. Members are named to the Board of Governors for one year. Two-thirds of all members of the Board constitute a quorum, and the Board elects from its members a chairman, vice-chairman and other officers and committees as is deemed necessary.

The Statute makes no provisions for removal of members from the Board of Governors, but that seeming omission poses no particular problem or apparent threat to its function in view of its annual tenure, plus the provision that it shall lay its own procedural guidelines. However, statutory provisions do exist for sanctions against members of the IAEA (General Conference) who fail to pay their financial contributions to the Agency, and for those

who fail to comply with Agency safeguards. Basically, the sanction is a loss of the voting privilege if the member is two or more years in arrears on his payments and contributions. A member may, however, be allowed to vote, if the General Conference agrees that failure to pay is due to conditions beyond the control of the member in arrears. On the other hand, a member may be suspended from the exercise of all privileges and rights of membership (two-thirds majority vote of the General Conference is required) if persistent violations of the Statute or of any agreements entered into by a member pursuant to the provisions of the Statute occur.

The IAEA was the driving force and continues to be the custodial authority behind the Treaty for Non-Proliferation of Nuclear Weapons (NPT 1970). The NPT specifically prohibits nuclear explosions for non-nuclear signatory states. Articles II and III of the IAEA Statute, however, do not specifically prohibit detonations of such devices as long as they are done for peaceful purposes; its prohibition is directed specifically against the use of nuclear energy in any form for military purposes. Therefore, it is theoretically legal, under the IAEA Statute, to detonate a nuclear device for peaceful purposes, while nuclear powered warships constitute a violation of the Statute. Add to this the fact that not all nations are members of the IAEA or signatories to the NPT, or both, and

the problem of enforcement, it can readily be seen, becomes traumatic.

While India is a member of the IAEA and even has a representative on the Board of Governors as its vice-chairman (1977), India is not a signatory to the NPT. Thus, it was held that India was well within the letter of the law (IAEA Statute) if not within its spirit on the peaceful application of atomic energy when it detonated its first nuclear device.

Until 18 May 1974, it could be said that the Non-Proliferation Treaty had fulfilled its central task. Proliferation of nuclear weapons to new States had not in fact occurred. But on that day the Indian Atomic Energy Commission announced the detonation by India of a peaceful nuclear explosive. India's announcement set off a wave of protest, particularly from those States that have most actively supported the Non-Proliferation Treaty. This concern was not dispelled by the assurances of the Indian Government that the explosion was solely for peaceful purposes and that India had no intention of producing nuclear weapons. The explosion carried out by India was termed a serious setback to the Treaty and to attempts to prevent the proliferation of nuclear weapons in general.

In assessing these reactions to the Indian explosion, it must be kept in mind that the Non-Proliferation Treaty makes no distinction between

nuclear weapons and other nuclear explosives. The Treaty bans both. The technology involved in both is the same; a State which has developed a peaceful nuclear explosive also has a nuclear weapon in its hands. The difference is only in intentions.

But India insisted on its peaceful intentions, and so the matter was accepted by the world and by the Agency.

As illustrated in Figure 11, IAEA funds for technical assistance are distributed throughout the various regions of the world.

The IAEA has organized numerous meetings and symposiums throughout the world and has been successful in obtaining a number of significant agreements. In 1961, it sponsored the first international meeting on the use of tritium in the physical and biological sciences, one attended by more than 290 participants from 27 nations. A symposium on the use of radioisotopes in animal nutrition and physiology was sponsored jointly by the IAEA and the FAO, and held in Prague in 1964. In 1968, an agreement was made with Mexico, with that country placing its entire nuclear program under IAEA safeguards. In 1969, Sweden and the IAEA signed an agreement under which the government of Sweden would provide the IAEA with funds for carrying out mutually agreed upon projects in developing countries. When the NPT went into effect in 1970, the Board of Governors established a Safeguards Committee to advise it about the

Agency's responsibilities under the NPT, after which 37 separate agreements were gradually concluded with states signing the Treaty.[11]

In some instances, the IAEA initiated special agreements or conferences connected with resolutions adopted by the General Assembly of the United Nations. For example, UN resolutions 31/6 and 31/69 concerned the denuclearization of Africa and nuclear cooperation with South Africa, respectively.[12] In November, 1976, the UN General Assembly urged all states to continue cooperating with the IAEA and to take measures to support its work on the peaceful uses of atomic energy (resolution 31/11).[13] The General Assembly commended the Agency on its latest survey of uranium resources, urging that the survey be kept under constant review.

The IAEA sometimes acts as a result of requests by various other agencies or by governments. Following the Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons in 1975, the IAEA was considered the appropriate international body through which benefits from peaceful applications of nuclear explosions could be made available to other non-nuclear weapon states. Accordingly, the Board of Governors established an Intergovernmental Advisory Group on Nuclear Explosions for Peaceful Purposes, open to all member states of the Agency.[14]

The UN Charter and the IAEA Statute

In attempting to establish a model for world order, a sharp distinction must be made between the organization as a social entity with experience in world affairs and the legal or political constitution or document which formally defines that entity. For example, the United Nations is formally defined by its Charter and the IAEA is formally defined by its Statute. However, the advantages or disadvantages that the Charter or Statute may have for world order can be either theoretical or actual, depending on the characteristics of the organization as well as on social conditions.

Since the rise of the independent state "system" at the end of the Middle Ages, there has been no genuine international system, and indeed much rivalry, between the major power groups. Secretary General U Thant of the United Nations has stated that "some system must be found to limit and control the nuclear arms race before it gets out of hand."[15] Halderman asserts that, although the United Nations was intended from the beginning to serve as a framework for such a system, its potential for this purpose is suspect today. "Two essential factors which have apparently never been widely grasped are, first, that the Charter, as originally written and adopted, was never anything more than the framework of a potential system, and second, that it nevertheless did, and still does, constitute

such a potential framework."[16]

When the Charter was drafted in 1945, it was hoped that the conditions for an effective control system were already present and that the Charter would provide machinery for the prevention or suppression of aggression. "Lack of such machinery was believed to have been responsible for the failure of the League of Nations."[17] It was hoped that Charter provisions for the use of force would remedy the underlying cause of this failure. This hope depended upon cooperation among the great powers for its realization. Halderman believes that the cause of the failure might better be stated as "the unreadiness of the world's peoples and governments to provide the necessary support and backing for a system designed to safeguard international peace and security."[18]

Halderman nevertheless emphasizes the importance of a constitutional system as the beginning of a free and peaceful world order. He stresses the importance of free and equal states, and the fact that any international system must necessarily have its roots in the minds of the people concerned as well as in their governments. A starting point for Halderman is that the peoples of the world must desire to see justice prevail, have a common notion of what they mean by justice, and develop general agreement as to how to go about securing it. In a sense, the "real" constitution for an organization is in the minds of the people, in world

opinion.

Thus, the statements of objectives both in the Charter and in the Statute are of special importance. The preamble to the Charter sets forth the objectives of a secure peace based on justice, while Article II of the Statute provides for furthering the contribution of atomic energy "to peace, health, and prosperity throughout the world" saying that assistance provided through the IAEA will be supervised and controlled in such a way as not to further any military progress.[19]

However, there are features of the Charter which have worked against its success, features that are better addressed in the Statute. One of these is the problem of power blocs or special interest groups. The planners of the Charter did not exhibit any special concern about the formation of blocs and special groups within the General Assembly. "Neither at the Dumbarton Oaks discussions nor at the United Nations Conference on International Organization at San Francisco was any consideration given to the fact that an assembly operating on a majority decision basis would probably develop an informal structure of groups and blocs."[20]

One reason for this lack of concern was that the Security Council had been visualized as the most important United Nations body, with voting procedure in the Council giving veto power to its permanent members, with little

likelihood that any bloc or any group action would have an effect on the Council. Neither was the subsequent cold war between the United States and the Soviet Union anticipated. The question of the distribution of seats in the General Committee of the Assembly was, by "gentlemen's agreement," on a geographic basis which presumably recognized the interest groups then discernible in the General Assembly. The six nonpermanent seats on the Security Council were intended to include two for Latin America, one for Eastern Europe, one for Westen Europe, one for the Middle East, and one for the British Commonwealth. This apportionment actually represented a recognition of the existence of blocs, so that the one seat for Eastern Europe really stood for the Soviet satellites, with the one seat for the British Commonwealth certainly not constituting a geographic area.

> By not openly determining the interest groups that needed representation, but justifying the distribution of the seats on a nebulous kind of "geographical distribution," a basis was laid for the necessity of bloc and group organization and for negotiation between the blocs and groups so as to satisfy each "interest" group that it was being given adequate representation on the councils and in the all-important General Committee of the Assembly. Further, the fact that the initial agreement for the Security Council, for example, provided no seats for Asia east of Iran except through the British Commonwealth seat meant that organization of blocs and groups for this area was inevitable as the membership of the organization expanded from the original 51 to the present 82, largely through the increase in the number of Asian members.[21]

The Security Council has somewhat been distorted by the resultant vying of interests and clambering for seats. Hovet finds 10 basic power blocs now on the international

scene: the Latin American, Western European, Benelux, Scandinavian, USA, British Commonwealth, Asian-African, Arab, African, and Soviet power blocs.[22] He points out that the smaller organs of any international body need to reflect the total membership and the interests of the total membership. The Board of Governors of the IAEA has struck such a balance with its relatively large membership and rules for extensive geographic representation. The IAEA, through its relatively finer breakdown of geographic regions to be represented on its Board of Governors, provides a closer congruence between actual special interests and geographic representation.

It may be argued that the Statute described an executive organ with narrow functions concerned primarily with technology. Yet, this very feature may particularly qualify the IAEA for leadership at the world level in the present and in the future. Most industrialized countries with market economies have found it expedient to create instruments at the highest executive level for formulating science and technology policies and for coordinating plans for the most effective use of scientific and technical resources. Some nations with planned economies have gained much experience in the formulation of national policy for the development of science and technology. Scientific planning is of even greater importance in less developed countries. Leys believes that "development has become, at

any rate conceptually, a universal priority, a self-generating aspiration resulting from status inequalities in the international system."[23]

Science policy is more than a policy for scientific research and cannot be treated in isolation. "The aim is to set science and technology within the framework of national policies for a structural transformation of agriculture and industry."[24] This approach is reflected in what the IAEA does at the international level. Article III of the Statute outlines fully the functions of fostering the development of atomic energy for a variety of scientific uses, including agriculture, mining, hydrology, medicine, and the generation of power. The future growth of scientific society will take shape around this very fundamental activity. The IAEA Statute is directly concerned with this developmental trend.

Article XV of the Statute provides that each member shall give the Agency legal capacity and immunities, as necessary, for the exercise of the Agency's function. These legal capacities, privileges, and immunities are to be defined in actual, separate agreements with various nations. Thus, the basis for relinquishing some national sovereignty has already been laid with respect to a specific function. Article XVI provides for agreements with other organizations, an important aspect of international experience relevant to a world governing body. The Statute provides the IAEA with authority to carry unsettled disputes

to the International Court of Justice (Article XVII).

As a constitution, the IAEA Statute has the advantages of (1) representation based on a realistic recognition of the geographic distribution of special interests, (2) power to make agreements with various nations who must surrender a part of their sovereignty with respect to the agreement, (3) extensive contacts with other world organizations, and (4) intimate connection with the various scientific and technological movements basic to a future world order. However, it does not provide for the preservation of national sovereignty as does the Charter through its recognition of the veto power. It is the absence of this feature in the Statute that would, at present, constitute the most serious debatable issue. Before accepting the Statute as part of a model for world government, the major powers, as well as most other nations, would undoubtedly demand the preservation of their current rights to supply other nations with arms or even to participate in local wars if requested to do so. At present, it is evident that no constitution would be accepted by any of the major powers if it did not permit individual nation states to maintain independent military forces.

Footnotes

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2. International Atomic Energy Agency, The IAEA: What It Is, What It Does (Vienna: IAEA, April 1976).

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16. John W. Halderman, The United Nations and the Rule of Law (Dobbs Ferry, New York: Oceana Publications, Inc., 1966), pp. 1-2.

17. Ibid., p. 2.

18. Ibid., p. 3.

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20. Thomas Hovet, Bloc Politics in the United Nations (Cambridge, Mass.: Harvard University Press, 1969), p. 15.

21. Ibid., pp. 5-6.

22. Ibid., p. 102.

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24. Graham Jones, The Role of Science and Technology in Developing Countries (New York: Oxford University Press, 1971), p. 16.

CHAPTER V

THE BALANCE OF POWER

An important condition for world order is maintaining a balance of power. The mere size of today's nations will not guarantee this condition, nor will a formal world constitution, although such a document is important. The strength of a nation or regional association will depend on a variety of factors. These factors include not only the level attained in the field of nuclear technology, but social, political, and economic development as well.

Weak and Powerful Nations

Taking into account both technological development and energy resources, Eklund distinguishes four different categories of states, depending on their specific concerns:

(1) Countries which are both advanced in development and rich in energy resources -- for example, the USA and the USSR -- and which share the task of perfecting a highly sophisticated technology. For nuclear power, these countries are the driving forces behind improved waste management techniques, quality assurance and

standardization, research and development, and studies concerning risk assessment;

(2) Countries which are advanced in development, but poor in energy resources: for instance, Japan, Sweden, Switzerland, and Italy, and, to a certain extent, France and the Federal Republic of Germany. These nations may have no immediate solution at hand other than conservation measures and the rational further development of the nuclear fuel cycles;

(3) Countries lacking in technological development, but rich in natural resources, such as the oil-producing nations. These nations can, at present, afford to buy both the technology and the know-how, but cannot be expected to remain dependent on foreign expertise and manpower in the long run; and

(4) Countries which need assistance both in development and in energy. Members of this category include not only those nations which the United Nations terms the "least developed countries," but also states such as India, Egypt, and the Republic of Korea, where extensive efforts have been undertaken in the nuclear field.[1]

While the foregoing categorization is in terms of technological and energy development, it parallels very closely the hierarchy of world power. Nations in the first category are militarily and economically more powerful than those in the second category; nations in the second category

are similarly more powerful than those in the third category, and so on; at least, they are considered so on the basis of common standards used in discussing the "power" of various nations. However, these generalizations should not be regarded as absolute. For example, the OPEC nations, many of which are in the third category, have collective economic power in the form of oil which can be applied as leverage to sway the greater powers in the first and second categories.

Regional and Special Interest Groups

Power, whether economic, military, technological, or developmental, cannot be viewed only in terms of a ranking of individual states. Of major concern are power blocs or conglomerations of special interests. Such associations can lead to beneficial cooperation, but can also serve as stumbling blocks to international cohesiveness. In 1956, for example, the UN delegate from Liberia noted that, "The Organization, instead of being united, is now shattered into blocs which seem to be losing all power of cohesion."[2]

Not all observers would agree with this view regarding the divisiveness of bloc politics. In that same year, 1956, the Canadian delegate to the UN called the formation of regional associations a partial solution to the problem of size, asserting that they can be flexible rather than hard blocs and it can naturally be expected that like-minded countries will work together. However, even the

Canadian delegate recognized the potential flaws in thoughtless bloc politics: "It is neither natural nor fitting when a group is forced to become -- superficially at least -- so united that it automatically votes as one, on even the most unimportant procedural issues."[3]

Individually weak nations can combine in various ways, as in the case of OPEC, to wield considerable power. Such blocs can also function to vote as a unit in international organizations such as the UN or the IAEA. As provided for by the Charter and the Statute, representation in the UN Security Council and on the IAEA Board of Governors explicitly recognizes this principle of power blocs in geographical representation, a representation which parallels the different regional social, economic, and military interests only to some extent.

Hovet defines a bloc as a group of states meeting regularly in caucus, the members of which are bound in their voting by the caucus decision.[4] Using this definition, he identifies only one genuine bloc in the UN General Assembly -- the Soviet bloc consisting of nine Eastern European nations. In contrast to a bloc, Hovet recognizes informal political organizations in the Assembly sharing a common interest as the basis for consulting on issues, a kind of consultation which does not bind members of the caucus group regarding how they must vote in the Assembly. These he calls caucus groups. As of 1959, Hovet had identified eight

such caucusing groups in the General Assembly: the Asian-African (19 members), Arab (10), American (9), Benelux (3), Commonwealth (9), Latin American (20), Scandinavian (4), and Western European groups (5). These caucusing groups are classified by Hovet as political interest groups involved in "behind-the-scenes" negotiations.

Hovet lists five distinct geographic groups in which there is no overlap in membership: Eastern European (10 members), Asian and African (29), Latin American (2), Western European and other states (18), and permanent members of the Security Council (China, France, the Soviet Union, the United Kingdom, and the United States).[5] To this list, Hovet adds the Commonwealth group of 9 members, obviously not geographic. All of these groupings are designed for the purpose of seat allocations on the UN General Committee, the three Councils, the International Court of Justice, and other committees.

In comparing the caucus groups with the geographic groups, only some congruence of membership is noted. Actually, the "geographic" distribution groups do not represent true geographic combinations of states. They are more an effort to arrive at a working division of major political interest subdivisions in the General Assembly. "A more truly geographical division might be along the lines of the formula established in Article VI of the International Atomic Energy Agency Statute."[6] That division consists of

North America, Latin America, Western Europe, Eastern Europe, Africa and the Middle East, South Asia, Southeast Asia and the Pacific, and the Far East.

Hovet points out that the IAEA geographic formula is based on the goal of electing members on the basis of actual geography rather than on the basis of political alliance. In the General Assembly, the division into geographic regions was determined on the basis of criteria that satisfied the various groups constituting the majority, and the minority groups which were not united found themselves "lumped together" in a wholly unrealistic "geographical region."[7] Even so, Hovet feels that there is a considerable correlation between geographic groups and caucusing groups in the UN. At any rate, it is clear that a geographic formula, to be realistic, must take into account the various caucusing groups in the bodies of an international assembly or conference designed to function as an instrument for world order or cooperation.

Hovet also identifies 21 distinct regional and 7 common interest groups. Regional interest groups, for the most part, do not have any regular procedural or organizational features such as caucus groups, but are bound together by certain factors operating independently of the framework of international cooperation such as the United Nations or the IAEA, and are based on special interests. The regional groups consist of collective security

organizations, regional alliances, regional economic organizations, and common participations in regional conferences. By contrast, common interest groups are not bound together by any sort of formal arrangements or by membership in a regional body, but nevertheless have elements in common which foster similar outlooks on certain types of issues. According to Hovet, these two kinds of groups are:

Regional Interest Groups. Anzus Council, Arab League, Balkan Alliance, Bandung Conference, Central Treaty Organization (formerly Baghdad Pact), Colombo Plan, Commonwealth, Conference of Independent American States, Council of Europe, European Atomic Energy Community, European Coal and Steel Community, European Common Market, European Payments Union, Nordic Council, North Atlantic Treaty Organization, Organization for European Economic Cooperation, Organization of American States, Organization of Central American States, Southeast Asia Treaty Organization, Warsaw Pact, and Western European Union.[8]

One strong implication of regional interest groups is that international law can no longer be considered as law consisting mainly of principles which govern the mutual relations of independent states. Hovet's listings[9] bear

witness to the establishment and evolution of an extraordinary number of international organizations. "These entities which are engaged in the performance of international functions, which possess international legal capacity and are endowed with international legal personality, not only influence the development of international legal principles but affect many phases of human endeavor."[10]

The IAEA in particular is endowed with numerous international rights, is bound by equally numerous international obligations, and is already clothed with a personality of its own. This character has been developed through its considerable experience in making international agreements, participating in treaty processes such as the Non-Proliferation Treaty of 1968, and associating extensively with various organs of the UN.

Developed and Underdeveloped Nations

That science and technology can help promote economic and social growth in the poor but developing countries can scarcely be doubted. The urgency of that growth is magnified by the seemingly widening gap between the rich and the poor. According to Blackett, "Unless great efforts are made the gap will be still wider -- and disastrously wider -- by the end of the century."[11] Blackett criticizes the International Council of Scientific Unions (ICSU) for its overconcern with the advancement of

science for its own sake rather than for the practical purpose of improving the welfare of mankind. In contrast, agencies such as the IAEA address themselves directly to narrowing the great gap between the developed and underdeveloped nations.

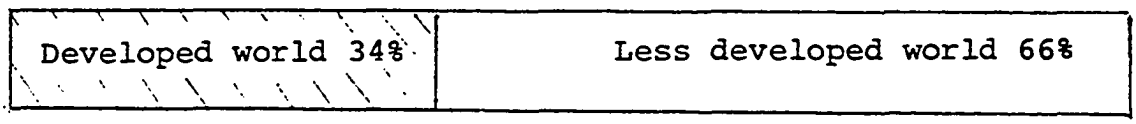
Jones offers the following statistics describing the underdeveloped as opposed to the developed nations. In 1970, about two thirds of the world's population enjoyed average annual earnings of only $135 per person, while the remaining one third, in the developed countries, earned $1,800 per person. Over the period 1950-67, the underdeveloped countries increased their Gross Domestic Product (GDP) at an average annual rate of 4.8 percent, but their population increased at the rate of 2.4 percent per annum, reducing the average GDP increase per person to only 2.4 percent per annum. Even though economic growth was less rapid in the industrialized countries, their populations were more stable, so that the GDP per person showed a net increase of 3.1 percent per annum. "The GDP of a rich country may increase in two years by $120 per head, which is more than the total GDP per head in many countries, such as India or Indonesia."[12] Figure 12 compares the developed and underdeveloped worlds with respect to population and gross national product.[13]

The rich, developed countries, already far ahead, are drawing still further away from the less developed

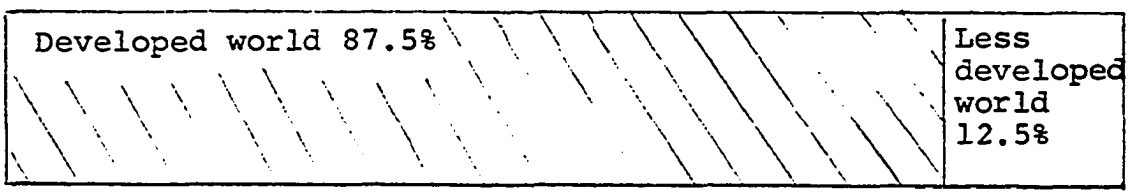
Figure 12

The Developed and Undeveloped Worlds With Respect to Population and to Gross National Product

Population



Gross national product



nations, worsening a potentially explosive situation. "For not only are the people of the poorer nations aware that these differences exist and are growing, but they are generally felt to be due, in part at least, to past and present exploitation."[14]

There is a tremendous range of variation between individual countries which makes it difficult to define an underdeveloped nation rigorously. Per capita figures do not disclose the wide diversity in population densities, natural resource endowments, social, political, and economic systems, and historical backgrounds.

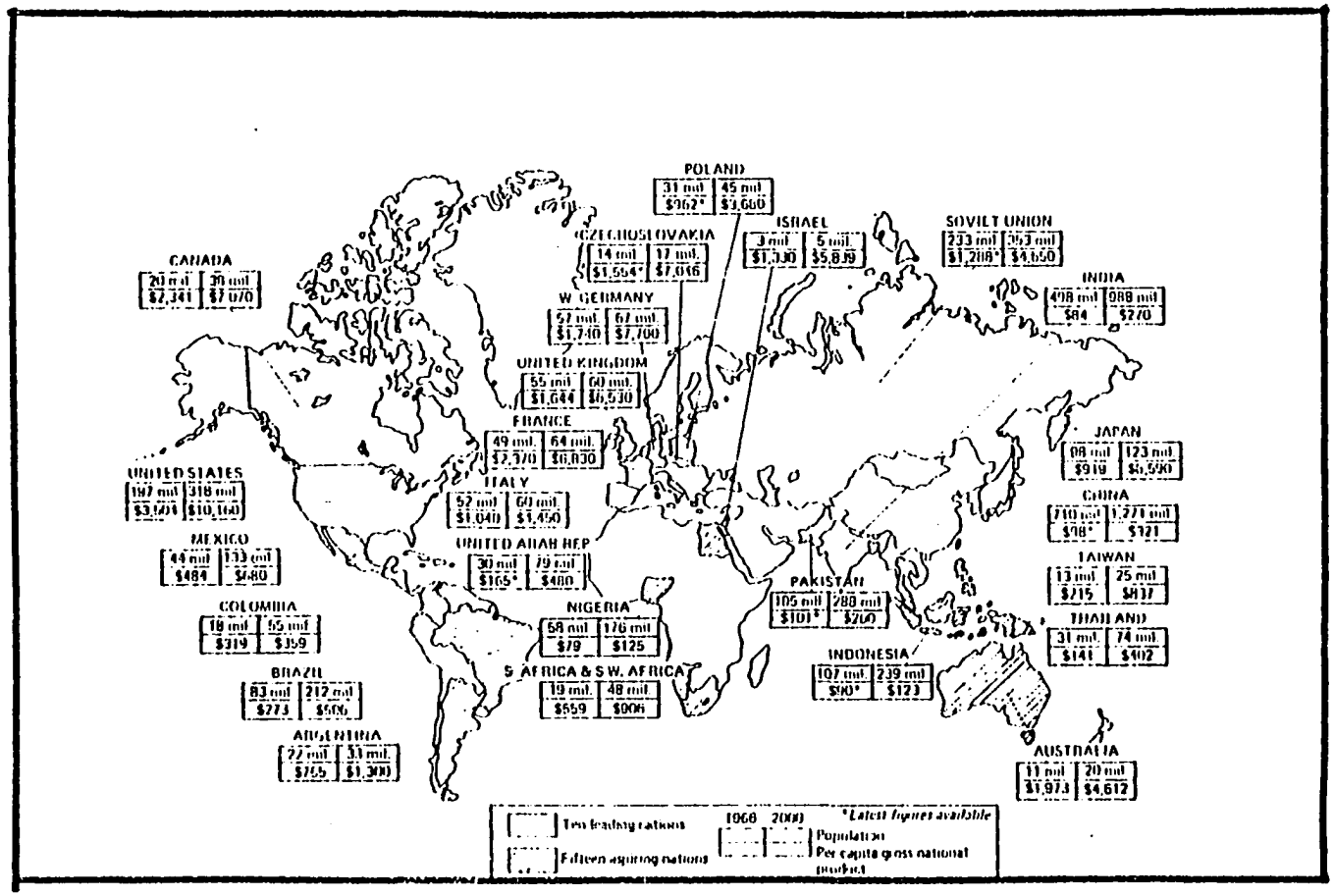
> Though on average almost equally impoverished, the problems of a small land-locked country like Chad, with few highly trained nationals and severely limited resources, are evidently very different from those of large countries like India, with a widely-based education system of relatively long standing and substantial industrial development. Even within a country the diversity may be enormous, with vast differences between classes or between regions. In Brazil, for example, State Domestic Income ranged from $750 per head in the province around Rio to about $75 per head in part of the north-east. In respect of development, each country, and often each region within a country, must be regarded as a special case.[15]

The geographic world distribution of the more important "haves" and "have-nots" is shown in Figure 13, with population and per capita gross national product data.

Jones holds that the application of science and technology in the underdeveloped countries will be almost impossible without the cooperation of the developed countries, and must be a priority concern for the entire world. The International Nuclear Information System (INIS)

Figure 13

Population and Economic Projections, 1966-2000, in 25 Countries[a]



[a]From The New York Times, January 6, 1969.

established by the IAEA in 1970 is one agency designed to encourage nuclear development internationally by serving as an information center concerning every aspect of the peaceful uses of nuclear science and technology. At present, 46 countries and 13 international organizations participate in INIS by providing input. "It is estimated that they are responsible for at least 95% of world publications on nuclear science and technology."[16]

The IAEA is currently able annually to award 430 to 450 fellowships, provide approximately 200 experts and visiting professors, and organize about 15 regional or interregional projects such as training courses and study tours. Equipment and supplies worth more than $3 million are provided annually to developing countries. Scientists from these countries are given the opportunity of visiting nuclear centers in more advanced countries in order to study the latest developments in the use of nuclear and other modern techniques, organizational aspects, and training methods.

The Agency also provides guidance to underdeveloped nations, and others, on the setting up and expansion of nuclear facilities in research institutions, hospitals, and universities. By the end of 1976, the Agency had provided assistance worth more than $62 million, trained more than 5,000 persons in nuclear science subjects by awarding fellowships, had sent more than 2,000 experts into the field

as advisers, visiting professors, and training course lecturers, and had provided equipment worth $19 million.[17]

In 1975, the IAEA developed a new training program to transfer the operating experience of more than 1,000 power reactor years in a small number of highly industrialized countries to developing countries beginning their own power programs. "The courses teach experience rather than classical engineering subjects and are directed towards engineers and management staff who may have had experience in more conventional areas."[18]

The Agency has been researching actively in the areas of food, agriculture, environment, and medicine, especially as these areas exist in the underdeveloped nations. "In cooperation with the Food and Agriculture Organization of the United Nations, the Agency program covers research on the use of radiation and isotopes in six fields: plant improvement by induced mutation; control of destructive insects by the sterile-male technique; improvement of livestock nutrition and preparation of radiation animal vaccines; study of effects of chemical pollution in agriculture and food; preservation of food by irradiation; and efficiency of water and fertilizer use."[19]

Future world development, especially of the underdeveloped nations, will require the alteration of social, economic, and political structures. Regardless of how much politicians and administrators sincerely want to

change society, whether it be the local economy or larger regional affiliations, the imposition of a particular model of social organization will depend on those who mold society -- on their traditions and customs. The role of political leadership is, accordingly, limited, and the implementation of its policies in backward nations depends on their acceptance by the mass base of society. "This acceptance, in turn, is related to the extent that the structure aspired to by the leaders conflicts with the technological needs of the agricultural production systems and the aspirations of the decision-makers within these systems."[20]

Nuclear "Haves" and "Have-Nots"

The balance of international power is influenced sharply by those possessing nuclear power. Even the possession of nuclear weapons is an unquestionable index of international superiority; those who have "the bomb" are not only the most influential in international politics but are economically the most wealthy and self-sufficient. Technologically advanced nations have the wherewithal needed to develop a nuclear capacity, while technologically underdeveloped nations do not.

A major problem faced by the IAEA is developing atomic energy for peaceful uses in underdeveloped regions without having these regions also enter the atomic arms race. Admittedly, the IAEA has no control over the nuclear "haves" such as the US or the USSR as concerns their

possession of atomic weapons. However, the importance of controlling the world arms race is paramount. The fact that the Agency was specifically designed for such a purpose makes it both an agent for the control of military power and a developer of national economies. Article I of the Treaty on Non-Proliferation of Nuclear Weapons (NPT) specifically forbids parties to the Treaty to transfer nuclear weapons or other explosive devices, or control over such weapons, to non-nuclear weapon states. The non-nuclear weapon states also agree not to seek such weapons in any way (Article II). Article IV sets out the rights of parties to the Treaty to engage in the research, production, and use of nuclear energy for peaceful purposes. The Treaty urges negotiations aimed at reducing the nuclear arms race, whether on a regional basis or on a worldwide level. In Article II, provision is made for each signing state to negotiate an agreement with the IAEA, according to the Statute of that Agency.

Although many industrialized nations will rely on energy conservation and on reduced rates of growth in energy consumption to alleviate their energy crises, developing countries can ill afford such an approach. For them, increasing the use of energy is essential and nuclear power and the use of imported oil or coal is often the only solution. It is not surprising that many of the developing nations are eagerly anticipating the construction by the

IAEA of nuclear power plants within their borders.

The use of nuclear energy even for purely peaceful purposes has not been without its problems, not the least of which has been President Carter's opposition to fast-breeder reactors and his concern with the proliferation of atomic supplies without adequate safeguards. In 1976, certain nations became concerned about the risks involved in the further proliferation of nuclear weapons, and the possible use by terrorists of nuclear materials emerged as a major problem. "These factors, coupled with environmentalist opposition, the after-effects of the recession, such as surplus plant capacity and shortage of investment capital, as well as escalating capital cost, led to a sharp fall in orders for new nuclear plants and to delays in a number of major projects for reprocessing of fast-breeder development."[21]

Orders for new nuclear power stations declined from 1974 to 1976. There was continued resistance to individual nuclear power plants, and the use of nuclear power became a major political issue in some IAEA member states. Publicly, the IAEA stand in the current controversy surrounding nuclear power plants has been low-keyed, often actually nonexistent. There is no commentary by the media about the breeder reactor squabble with major suppliers of fissionable materials, an issue well-publicized when it comes to advertising President Carter's dislike for fast-breeder

reactors because of their potential for providing atomic weapons. Yet, the IAEA has maintained an excellent safety record, with no fatal or serious accident resulting from the nuclear components of any power plant since the inauguration of nuclear stations more than 20 years previously. Through the functions of the Treaty and the IAEA, the nuclear "have-nots" have continued to benefit not only from the greatly enhanced power generation of nuclear plants, but also from the various other scientific activities of the Agency throughout the world, including those in agriculture and in medicine. Despite these trends in power plant generation, "it remains true that for the great majority of the Agency's developing Member States application of nuclear science and techniques in food and agriculture, medicine and development of water resources represented the main, if not the only tangible, benefits that can be achieved at this time from the peaceful uses of atomic energy."[22]

The technical assistance provided by the Agency over the years has undoubtedly helped strengthen research institutes and university departments in the developing nations. The rate at which technical assistance can be absorbed in the nuclear field differs considerably from one country to the next because of differences in the levels of technological development. Of the 98 states that have received technical assistance since 1958, only 16 have received more than a million dollars' worth, and each of

these is a comparatively populous developing nation which is also relatively well advanced in the nuclear field. "Thirty-six developing countries, on the other hand, have received less than $255,000 of technical assistance from all the sources available to the Agency."[23]

Through 1977, the Agency has always had sufficient funds to meet its technical assistance obligations. However, if there is a continued growth of programs funded with nonconvertible currencies, liquidity problems may well arise. The Secretariat is exerting efforts to make full use of nonconvertible currencies. There will be a continuing need for larger pledges of voluntary contributions, to meet additional requests for assistance and to ensure that sufficient convertible funds are available for this purpose. "Provided that additional resources are forthcoming, the Agency's regular program will continue to provide a unique means of transferring a group of specialized technologies to the developing countries."[24]

Dependent Nations and Those on Whom They Are Dependent

If one were to list the dependent nations and those on whom they depend, perhaps Eklund's four categories, described earlier in this chapter, would be useful in identifying and classifying such nations. Those in the first category would be the most independent, those in the second the next most independent, and so forth. Conversely, those nations in the fourth category would tend to depend on

those in all higher categories, and a corresponding statement could be made for those in the third and the second categories. Wealth in terms of technological development and a supply of energy resources are two of the key factors determining the hierarchy of independence and dependence.

These two factors are, however, not the only major variables. Members of regional and special interest groups exhibit an interdependence separate from their dependence on nations outside their special interest group, region, or Eklund's categories. For example, the OPEC nations are widely scattered geographically and have various alliances and relationships with numerous other nations, both developed and underdeveloped. Yet, their self-interests and even their survival require a certain amount of dependence on each other.

Regional political alliances can produce strange bedfellows. The requirements of foreign military alliances, for example, sometimes find large, powerful, independent nations such as the United States becoming dependent on the good will of certain nations that would otherwise be ignored or rejected on political grounds. In recent years, for instance, the United States has become or been "dependent" in subtle ways on South Vietnam, certain OPEC nations, and Israel; that is, the nature of the relationship, and the situational requirements of strategy and diplomacy, did not

always permit America to play its hand, so to speak, as it would if it were capable of having its own way. The issue is complicated even more by the existence of multinational corporations exerting influence within and between nations in regard to the development and use of atomic power. In the United States, for example, such pressure groups often interfere with what might otherwise be a straightforward resolution of problems in the best interests of the nation and of the world community.

Hovet's analysis, cited earlier, brings out the purely political nature of the power bloc play exhibited in parliamentary bodies such as the General Assembly of the United Nations. In a maneuver analogous to the political maneuvering in Congress, powerful nations can find themselves depending heavily on parliamentary alignments consisting of dependent nations, the power of which is enhanced through such alignments. A geographical basis for the assignment of seats creates a certain amount of dependency among the nations in a given region, since they are vying for representation from their region. The IAEA breakdown into nine geographic regions providing candidates which are then elected by the General Conference to the Board of Governors, with a predetermined number of representatives from each region, has a certain equalizing effect within each region. The election of board members is subject to power bloc politics in the General Conference,

where the vicissitudes of caucusing have a tendency to equalize the balance of power even further. Because of the interplay of regional, special interest, and political dynamics, the developed and the underdeveloped nations, the nuclear "haves" and "have-nots," do not necessarily exhibit the kind of independence or dependence that might be expected. Because of their "power of the caucus," member states of the IAEA Conference or Board of Governors display interdependence rather than the extremes of complete independence or complete dependence. Moreover, the specific function of the IAEA places the technologically and economically independent nations in a proper role in relation to the dependent nations: namely, in the role of helpers through technical assistance. The IAEA's numerous offers of fellowships, staffs of consulting experts, conferences, nuclear safeguard agreements, and scientific assistance have given it a worldwide reputation and experience in the area of constructive social development. The dependence of nations on the IAEA is not one of mere political expediency. Neither is the IAEA a world arena for power plays. Rather, it represents positive need relationships that are fulfilled in a way that does not depend on caucusing or on power politics.

The developing countries sorely need visiting experts from the developed nuclear nations. Such experts provide up-to-date information about the state of the

science and new research methods and ideas, and help break down the comparative isolation of the developing nations. Lectures, seminar talks, and cooperation with local workers on specific topics do much to help stimulate and modernize the developing nations.

> A striking characteristic of the scientific life of the underdeveloped countries is that their personnel consists mostly of very young people, so that there is a crying need for group leaders, for originators of research, for "idea men" who can guide the young graduates until they themselves, after five or ten years of experience, become scientific leaders. Thus a Western researcher with some experience in independent research can do wonders in making effective use of local talent, which might otherwise relapse into aimless stagnation . . . . At the same time, the stay will benefit him also, as a scientist and on the human level.[25]

Extension of technical assistance to needy nations on a worldwide basis projects the IAEA into a role consistent with the establishment of world order. According to Halderman, "Most people no doubt consider that a concerted move by states to apply pressures against another state, with a view to forcing a change in its internal image, would be wrongful intervention."[26] The IAEA, through agreements with individual member states, has established a policy of intervening in specific instances, not to force change but to produce constructive change in scientific areas -- areas which, to an ever increasing extent, are directly related to a nation's economic and social development.

Through its extensive worldwide technical aid and

control of atomic energy, the IAEA has established the basis of rule by consent and cooperation in areas fundamental to continuing social development. More important than its Statute is its administrative machinery, experience, and worldwide organization established in the course of activities covering several decades. The IAEA possesses institutional flexibility and can easily adapt itself to evolving world needs. Increased IAEA involvement appears to be imminent.

> This could extend from providing advice to its Members to establishing new organizational mechanisms and procedures within the IAEA, and to creating new institutions external to the IAEA but which would involve the IAEA in a direct way. The modes to be chosen will be very much dependent upon the objectives of the operation and the need for international cooperation. The possibilities are broad, the opportunities for the IAEA to be of service are equally broad.[27]

The IAEA Scientific Advisory Committee and the World Scientific Community

The IAEA Statute has provided for a balance of power through its provision for a General Conference, Board of Governors, and Secretariat, with the Board membership determined in part by strict rules concerning geographic representation. Equally important for carrying out its function is the administrative machinery, in the form of various committees. Foremost of these committees is the IAEA's Scientific Advisory Committee.

The Scientific Advisory Committee was established by the Board of Governors in September, 1958 and has consisted

of scientists of international eminence. The Committee meets about twice a year to advise the Director General, and through him the Board of Governors, about specific scientific and technical questions generated by Agency programs. The scientists serve not as representatives of their respective governments but as individuals. As a committee, they are independent of the IAEA Secretariat. The first seven members appointed in 1958 were Bhabha of India, Cockcroft of the United Kingdom, Emelyanov of the USSR, Goldschmidt of France, Gross of Brazil, Lewis of Canada, and Rabi of the USA. In 1959, the Scientific Advisory Committee, meeting in Vienna, "strongly recommended that the IAEA should become the world focal point for the exchange of information on progress in the field of controlled fusion and plasma physics."[28] In 1967, the membership of the Committee was increased from seven to ten in order to have all of the principal aspects of Agency activity represented on the Committee. The UAR, France, Canada, Czechoslovakia, Japan, the UK, Brazil, the USA, India, and the USSR were all represented on the expanded committee.

Closely related to the Committee are the Standing Advisory Group on Safeguards Implementation (SAGSI) and the Scientific Council of the International Centre for Theoretical Physics (at Trieste). For 1978 alone, 14 international conferences were set with world scientists

meeting and exchanging ideas on topics including the export of nuclear power plants, biological effects of ionizing radiation, nuclear power plant control and instrumentation, isotope hydrology, radiation protection and monitoring, seed protein improvement in cereals and grain legumes, and nuclear materials safeguards.[29]

In pursuing these activities, nuclear scientists of world stature meet to decide issues of international importance. In implementing the NPT, the Agency was required to negotiate with representatives of each nation signing the Treaty. In these negotiations and in hundreds of meetings, symposiums, fellowship programs involving thousands of scientists from all over the world since IAEA's inception, the Agency has developed a spirit of international cooperation, a valuable ingredient in the formation of the world ideology vital in any model for world order. In the various IAEA periodicals and bulletins, such as the Atomic Energy Review launched in 1963, top world scientists come to know one another in a real sense, through technical cooperation. Their interaction leads to even larger official conferences, such as the Fourth International Conference on the Peaceful Uses of Atomic Energy held at Geneva in 1971.[30] That Conference was attended by some 1800 delegates and advisers from 79 different countries.

Nuclear Law

While the Agency's Statute does not provide for anything that parallels the International Court of Justice, its experience has involved it in the establishment of international principles of law. Especially important has been the area of third-party liability in the event of nuclear damage. An absence of special legislation could leave injured victims without any means of redress. Problems would be likely to arise if different nations were to establish different principles and procedures in their laws concerning third-party liability.

To resolve this problem, a number of steps have been taken. The health and safety aspects of mining and milling uranium were reviewed at a symposium organized jointly by the IAEA, the International Labor Organization (ILO), and WHO.[31] The Brussels Convention on the Liability of Operators of Nuclear Ships (1962) and the Vienna Convention on Civil Liability for Nuclear Damage (1963) established minimum standards for the liability of the operator of a nuclear installation or nuclear ship in the event of accidents occurring during the operation of nuclear ships or of the installation, or during the transport of nuclear materials. At the international conference held in 1971 at Brussels under the joint auspices of the Inter-Governmental Maritime Consultative Organization (IMCO), the Nuclear Energy Agency of the Organization for Economic Cooperation

and Development (OECD/EA), and the IAEA, an agreement was reached which exempts shipowners from liability under international maritime law in case of nuclear damage falling within the purview of the Paris Convention on Third Party Liability in the Field of Nuclear Energy (1960).

There has been a growing awareness of the need for setting up both a legislative framework and specialized regulations for the licensing and control of nuclear installations. IAEA conferences and meetings in 1974 and 1975 discussed the requirements for licensing and regulatory control of nuclear power plants, the role of advisory bodies in safety reviews, the needs for appropriate regulatory bodies, and the importance of liability provisions in connection with contractual arrangements for procuring nuclear equipment and materials. The IAEA has provided advisory services on these matters, including in-service training in various legal aspects of atomic energy.

Footnotes

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28. IAEA, 20 Years, p. 14.

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CHAPTER VI

THE VARIOUS IAEA PROGRAMS

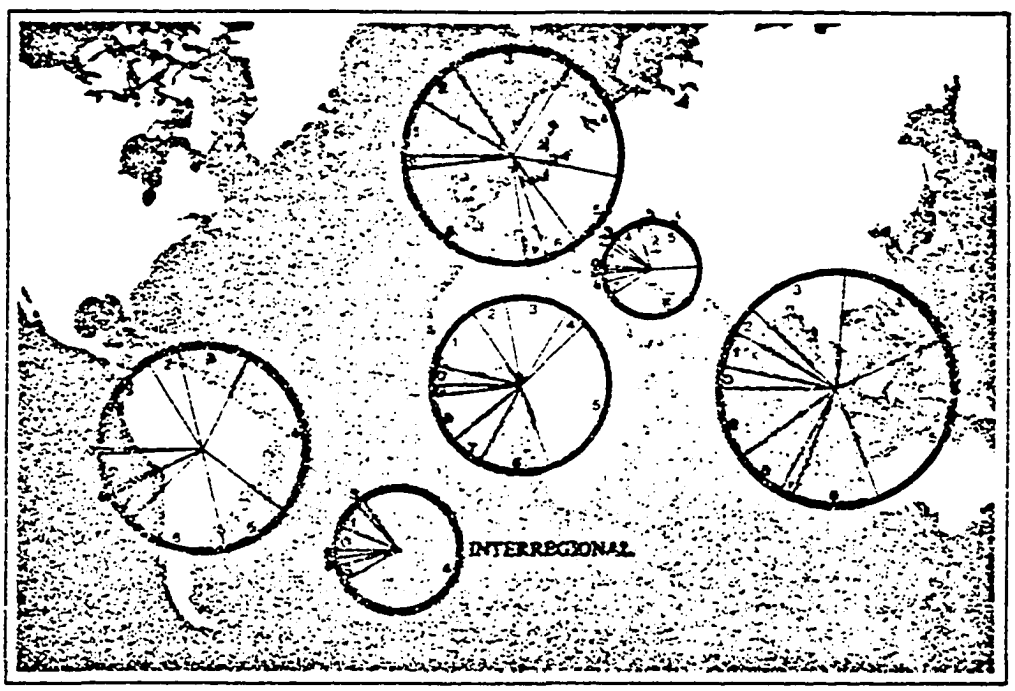
Essential to any system of government, whether national or international, is an administrative apparatus headed by a thoroughly experienced diplomatic corps. The various IAEA programs reflect an extensive diplomatic experience and administrative machinery. Spanning several decades of constructive service, the Agency's worldwide structure blends well with almost any ideal model for world order.

Articles VIII through XII of the IAEA Statute provide for important functions in the areas of information; supplying materials; services, equipment, and facilities; agency products; and agency safeguards. Figure 14 shows the distribution of technical assistance by field and region for 1976.[1]

The Agency is involved in five basic fields of service and assistance and in eight kinds of services and assistance. However, these programs are not necessarily fixed, since member states can request advisory services from the Agency in any field within its competence.

Figure 14

DISTRIBUTION OF TECHNICAL ASSISTANCE BY FIELD AND REGION: 1976 a/



SUMMARY

Field of activity		Africa %	Asia and the Pacific %	Europe %	Latin America %	Middle East %	Inter-regional %	All regions %
0 - General atomic energy development		4	3	–	16	1	6	5
1 - Nuclear physics		12	5	9	5	7	7	7
2 - Nuclear chemistry		6	4	7	11	2	–	6
3 - Prospecting, mining and processing of nuclear materials		12	14	18	28	2	2	16
4 - Nuclear engineering and technology		4	17	19	11	8	77	19
Application of isotopes and radiation in	5 - Agriculture	32	26	12	16	29	4	20
	6 - Medicine	13	12	5	5	42	–	9
	7 - Biology	6	2	3	1	5	–	3
	8 - Industry and Hydrology	9	7	25	6	3	2	11
9 - Safety in nuclear energy		2	10	2	1	1	2	4
		100%	100%	100%	100%	100%	100%	100%

a/ For each region, the relative monetary value of the technical assistance provided by the Agency is denoted by the size of the circle superimposed over the region on the map. The size of the segments in each circle indicates the share of total assistance given in the various fields of activity.

From IAEA, The Annual Report for 1976 (Vienna: IAEA, 1977), p. 15.

Fields of Service and Assistance

The first major field of service and assistance comprises activities connected with the development of nuclear power, reactor technology, and nuclear studies. There are seven major subareas[2]:

1. Applications of nuclear energy. Includes the use of nuclear energy for generating electricity, for processsing and desalting water with nuclear energy; possibilities for agri-industrial centers combining power, desalinization, and chemical manufacture.

2. Economics of nuclear power. Comparisons are made with other sources of power. The economic merits of nuclear power under specific circumstances or for specific nuclear power programs are considered. Also considered are the economics of various fuel cycles.

3. Nuclear power programs. Involves planning of a nuclear power program and its integration into a system. Such programs must account for choice of reactor type, siting of reactors, training of staff, and auxiliary services.

4. Fuels and fuel cycles. Involves fabrication, testing, and inspection of fuel elements for reactors; reprocessing of irradiated fuels; fission products, their separation, and their use or disposal; plutonium, depleted uranium, and depleted thorium; and technical problems of fuel cycles.

5. Nuclear materials management. Seeks to establish and improve methods of nuclear materials management, especially with regard to accounting, physical inventory taking, measurements, containment and surveillance measures, evaluation of material remaining unaccounted for, and raw materials.

6. Research reactors. Involves reactor research and utilization of research reactors. Covers joint projects between member states for using reactors, staffing and organization, and materials testing.

7. Nuclear research and scientific studies. Involves the development of coordinated research programs; development of research techniques for the study of particular local problems; feasibility studies; compilation and evaluation of nuclear data; and standardization of radioactive sources. Special consideration is given to the fields of nuclear physics, reactor physics, solid-state physics, plasma physics, the chemistry of nuclear materials, radiochemistry, radiation chemistry, radioisotope production, and activation analysis.

A second major field of service and assistance centers around the uses of radiation sources and radioisotopes. These uses occur in medicine, biology, agriculture, industry, and isotope hydrology.

In medicine, applications are in the areas of clinical diagnosis and investigation, radiotherapy, and

research studies in the use of isotopes.[3]

In biology, applications are in the area of accumulating and evaluating information about the somatic and genetic effects of ionizing radiation, including repair mechanisms in living organisms. Radiation is also used for sterilizing single-use, prepackaged medical products, basic pharmaceutical materials, and biological tissue preparates. Hazards to man and his environment from radiation accompanying nuclear applications are also evaluated.

In agriculture, studies include the efficient use of water and fertilizer by crops, crop improvement by means of induced mutations in plant breeding, animal nutrition and physiology, entomology, applications of ionizing radiation to control maturation and sprouting processes in fruits and vegetables, and isotope tracer-aided research on the fate and significance of pesticide residues and other chemical and radiochemical contaminants of food and of the agricultural environment.

In 1964, the United Nations Food and Agriculture Organization (FAO) and the Agency combined forces to form the Joint Division of Atomic Energy in Food and Agriculture. This Division supports about 200 projects annually in member states, using nuclear techniques for research in the previously listed areas. The net effect of the projects is "to develop better varieties of crop plants, to provide optimal conditions for crop cultivation, to protect crops

against losses through disease and insect attack, to improve animal production and health, to prevent pollution of the environment and harmful residues in agricultural products, and to preserve food for human consumption."[4]

In industry, widespread use is made of radioisotope instruments, gamma radiography, radioisotope tracers, ionization, luminescence and power, and massive irradiation.

In isotope hydrology, emphasis is placed on groundwater hydrology, surface water hydrology, hydrometeorology, laboratory research in isotopic analyses, and the improvement of analytical methods.

A third major field embraces activities related to safety in using atomic energy. These include safety standards, regulations, and procedures; radiological protection; safety of reactors and nuclear materials; management of radioactive wastes; and safety evaluations. Until 1970, Agency safeguards were limited to isolated industrial plants. Under the NPT of 1970, this limitation was removed.[5] Each non-nuclear weapon nation that joins the Treaty nations now is required to negotiate safeguards agreements with the IAEA. The Agency then carries out a series of steps to apply safeguards[6]:

1. Design Review. The nation must supply the IAEA with information on relevant design characteristics of its existing nuclear plants and of new plants in the planning stage.

2. Records. The nuclear plant operator must keep a precise account of all nuclear material he has, receives, and sends out or otherwise disposes of, based on exact measurements of the materials.

3. Reports. On the basis of the information supplied by the plant operator, the national authority sends the IAEA regular reports on the quantities of nuclear materials in each plant and of all changes in these quantities, so that the IAEA can keep its own record of accounts for verification and comparison.

4. Inspections. IAEA inspectors perform independent measurements and observations to verify the information submitted by the country concerned. All inspectors must be approved by the Agency's Board of Governors and are designated with the consent of the country concerned. At the moment, the Agency can boast of "30 years' experience in storing high-level nuclear wastes."[7]

A fourth major field is that of activities related to the legal aspects of atomic energy. The Agency can aid in framing outlines of legislation providing for:

(a) The establishment of national bodies dealing with atomic energy.

(b) The development, control, and uses of atomic energy for peaceful purposes.

(c) Radiation safety, health, and environmental protection.

(d) The safe transport of radioactive materials.

(e) The licensing of nuclear installations, including nuclear power plants and associated facilities.

(f) Third-party liability for nuclear damage and financial security.[8]

The agency also makes surveys of national legislation relating to atomic energy, studies legal problems connected with nuclear safety and with its other programs, and provides in-service training in nuclear law and related matters.

A fifth major field consists of activities related to the implementation of Agency safeguards in all peaceful nuclear activities. Involved are the making of agreements between the Agency and states required in connection with the NPT, with emphasis on records, verification of the flow of nuclear materials and verification of physical inventories, and establishment of strategic points for measurement and for containment and surveillance measures within material balance areas.

Kinds of Service and Assistance

The first major kind of service is the Agency's management of numerous technical cooperation programs. Resources are made available as part of the Agency's regular programs of technical assistance and under the United Nations Development Program (UNDP). Kinds of assistance available include expert services, equipment and supplies,

visiting professors, fellowships, scientific visits, and intercountry projects. Table 3 lists the Agency's 1976 intercountry projects.[9] "The subject of State systems of nuclear materials accountancy and control continues to be of vital concern, and planning for future training courses continues."[10]

A second major kind of service is represented by the research contract program. It was established as a means of providing direct financial support for a limited number of projects in selected fields of high priority. Efforts are made to place contracts with institutes in developing nations.[11]

A third major kind of service is provided through the International Center for Theoretical Physics at Trieste. The main fields of research and training for research at the Center are in solid-state physics, elementary particles and fundamental theory, nuclear physics, science teaching, and applicable mathematics. Approximately 850 scientists visited the Center in 1976.[12] "The Center represents the first attempt to establish a truly international scientific training and research institute."[13]

A fourth major kind of service revolves around the IAEA laboratories. The Agency's Laboratory is installed partly at Seibersdorf, near Vienna (the physics section, the chemistry section, including the low-level radioactivity group, and the agricultural section) and partly at

Table 3

Intercountry Projects Conducted in 1976

Project Title	Place and Dates	Total Number of Participants	Source of Funds
Interregional training course on nuclear power project planning and implementation	Argonne, Illinois January 6 to April 16	38	Regular Program
Regional training course on the technical and economic aspects of nuclear power development	Manila, Philippines February 16 to 27	38	Regular Program
Interregional training course on nuclear power project planning and implementation	Saclay, France March 30 to July 7	28	Regular Program
Interregional training course on the use and maintenance of nuclear and related electronic equipment	Turin, Italy April 26 to July 23	16	UNDP and Regular Program

Table 3 (cont.)

Project Title	Place and Dates	Total Number of Participants	Source of Funds
Study tour on the utilization of low-energy accelerators in research and practical applications	Czechoslovakia German Democratic Republic, Hungary, and the Soviet Union, May 17 to June 24	24	Regular Program
Interregional training course on nuclear power project planning and implementation	Karlsruhe, Federal Republic of Germany September 6 to November 30	36	Regular Program
Interregional training course on nuclear power plant construction and operation management	Argonne, Illinois September 8 to December 17	41	Regular Program
Interregional training course on the use of nitrogen-15 in soils research	Leipzig, Germany Democratic Republic September 21 to October 22	14	Regular Program

Table 3 (cont.)

Project Title	Place and Dates	Total Number of Participants	Source of Funds
Interregional basic training course on state systems of accounting for and control of nuclear material	Vienna, Austria November 2 to November 19	28	Regular Program and Government of the United States of America

headquarters (the isotope hydrology section, the medical applications section, and the dosimetry section).[14]

Advisory and field services comprise a fifth major service. Advice and assistance can be given ad hoc on problems of nuclear safety and environmental protection submitted to the Agency directly or to the ILO/FAO/IAEA Advisory Service on Radiation Protection and Waste Management. The services are in the areas of isotope hydrology, industry, agriculture, life sciences, reactors, desalinization plants, power needs, nuclear materials management, and legal aspects.

A sixth major kind of service consists of providing information. A new addition to this program is the International Nuclear Information System (INIS). Books and films are collected at Agency headquarters and made available to scientists. The empnasis in this area is on scientific meetings, publications (such as Nuclear Fusion, Atomic Energy Review, Directory of Nuclear Reactors, and Power and Research Reactors in Member States), library services and documentation, a film library, and a joint IAEA/NEA Computer Program Service.[15]

A seventh major service is the dissemination of nuclear data. The Nuclear Data Section (NDS) serves as a center for its member states. Its objectives are to promote the worldwide exchange and evaluation of nuclear data information, to assess nuclear data needs, and to promote

national nuclear data programs. Cooperation has been good. "A new data base management system for the handling of IAEA safeguards data was donated [in 1977] to the Agency by the Federal Republic of Germany."[16]

An eighth major service is supplying nuclear materials and related items. Nuclear materials, such as natural or depleted uranium, uranium enriched with uranium-235, uranium-233, plutonium, and thorium, can be supplied to member states. These materials, which are supplied by member states, are connected with reactor projects and research projects.[17]

Funding

The annual budget estimates covering the Agency's activities are initially prepared for the Board of Governors by the Director General, assisted by the Secretariat and by the IAEA staff of international civil servants. The Board then submits the budget estimates to the General Conference for approval.

The Agency's work is financed from a number of different sources:

(a) Assessed annual contributions from all Member States toward the regular budget;

(b) Voluntary cash contributions toward the budget from which the Agency's own programs of technical assistance and training are financed;

(c) Donations in kind (equipment, services of

experts, fellowships, etc.) to supplement the voluntary cash contributions of Member States;

(d) Funds allotted for technical preinvestment assistance projects to be executed by the Agency under United Nations Development Programs (UNDP) auspices;

(e) Miscellaneous income from reimbursement for services performed; sale of publications, interest on bank accounts; and money received to cover overhead expenses resulting from the execution of UNDP-financed projects; and

(f) Funds made available by governments, foundations, and other sources in support of specific programs.[18]

Table 4 shows the amounts of assistance by field of activity and type for 1975 and 1976.[19]

International Cooperation and Activity

The Agency cooperates with the United Nations, the International Labor Organization (ILO), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the World Health Organization (WHO), the International Civil Aviation Organization, the World Meteorological Organization (WMO), and the Inter-Governmental Maritime Consultative Organization (IMCO), on the basis of relationship agreements which have been concluded with these organizations. There is also a Joint FAO/IAEA Division of Atomic Energy in Food and

Table 4[a]

Assistance by field of activity and type: 1975 and 1976
(in thousands of dollars)

Field of Activity	Year	Experts	Equipment	Fellowships	Share of total programme	
		$	$	$	$	%
Application of isotopes and radiation in agriculture	1975	599.2	708.6	503.6	1811.4	21.2
	1976	541.9	626.8	520.1	1688.8	20.3
Nuclear engineering and technology	1975	357.9	493.3	593.5	1444.7	16.9
	1976	436.4	304.6	791.7	1532.7	18.4
Prospecting, mining and processing of nuclear materials	1975	848.3	378.3	132.1	1358.7	15.9
	1976	836.5	365.7	127.2	1329.4	15.9
Application of isotopes and radiation in industry and hydrology	1975	143.0	812.7	138.5	1094.2	12.8
	1976	181.5	619.6	91.0	892.1	10.7

Table 4[a] (cont.)

Field of Activity	Year	Experts	Equipment	Fellowships	Share of total programme	
		$	$	$	$	%
Application of isotopes and radiation in medicine	1975	175.3	218.7	289.9	683.9	8.0
	1976	167.6	317.1	295.7	780.4	9.4
Total	1975	2123.7	2611.6	1657.6	6392.9	74.8
	1976	2163.9	2233.8	1825.7	6223.4	74.7
Total assistance	1975	2854.0	3387.7	2311.0	8552.7	100.0
	1976	2878.9	2910.7	2541.0	8330.6	100.0

[a]From IAEA, The Annual Report for 1976 (Vienna: IAEA, 1977), p. 14.

Agriculture located at the Agency's headquarters. In addition to the International Center for Theoretical Physics at Trieste, there is a Laboratory of Marine Radioactivity in the Principality of Monaco, operated by the Agency and by the governments of Italy and Monaco, respectively, with the cooperation of UNESCO.[20]

IAEA liaison officers are stationed at the United Nations and WHO headquarters, and a WHO liaison officer is stationed at IAEA headquarters. Cooperation agreements have been made with the Inter-American Nuclear Energy Commission, the League of Arab States, the Organization of African Unity, the Organization for Economic Cooperation and Development/Nuclear Energy Agency, and the Organization for the Prohibition of Nuclear Weapons in Latin America. Furthermore, certain nongovernmental organizations have consultative status with the IAEA. Table 5 gives an indication of the scope of international activity during the period 1973-1976.[21]

It should be noted that there has been a marked increase in the number of technical committees, advisory groups, and similar meetings.

Evaluation of IAEA Performance

The lengthy list of services and other assistance, the meetings convened, and the safety record of the IAEA speak for themselves as a positive evaluation of that Agency. Praise and evaluation have been forthcoming from a

Table 5

Meetings Convened by the Agency

Item	1973	1974	1975	1976
Conferences, symposiums and seminars	15	13	14	13
Participants	2677	2236	2111	2329
Countries taking part	59	76	60	72
Papers presented	715	710	564	699
Other meetings (technical committees, advisory groups, etc.)	105	115	116	204

number of sources. On November 10, 1976 the General Assembly of the United Nations commended the Agency on its preparation of the latest survey of uranium resources and urged that the survey be kept under constant review. "The Assembly welcomed the important steps taken during the year by the IAEA in concluding safeguards agreements with many States and noted with appreciation the Agency's efforts in connection with the physical protection of nuclear materials and its study of the concept of regional fuel cycle centers."[22]

The IAEA has been widely acclaimed for its leadership in spearheading technological growth in the developing nations. With regard to its technical guidance in specific types of operations, including the safe transport of radioactive materials, "such standards have proved to be a useful basis for international regulations and national legislation."[23]

At the opening session of the 21st General Conference of the IAEA, the Secretary General of the UN, Dr. Kurt Waldheim, focused attention on the growing importance of atomic energy in relation to peace and economic development. "As we mark this anniversary, it is fitting to emphasize the impressive achievements of the Agency in this regard and the invaluable contribution it has thus made to two fundamental objectives of the United Nations: peace and economic development."[24]

Amadou Cissé, Chairman of the IAEA Board of Governors, cites the need felt keenly by developing countries for nuclear technology, especially important in view of the gulf which separates their levels of development from those of the industrialized states. "The International Atomic Energy Agency is deeply concerned with these matters and is endeavoring to assist its Member States to acquire the infrastructure necessary for implementation of their projects."[25]

Krymm et al.[26] believe that the full contribution of nuclear power to the world energy supply will be achieved only if a climate of confidence in such critical areas as nuclear fuel supplies and safeguards is established throughout the world. Achieving such a climate is precisely the function of the IAEA. Tape is especially confident of the Agency's role in that capacity, citing its flexibility, safeguards system, and nuclear materials control. He views the world situation as requiring "increased IAEA involvement."[27]

Control of nuclear energy, international cooperation, and world peace are key elements in the international community which has given the Agency important tasks to accomplish under the NPT. "During the first twenty years of the Agency's life, the industrial use of nuclear power has grown from infancy to maturity and is available to play an ever increasing role in providing energy for an

energy-hungry world, which includes developing as well as advanced countries."[28]

Nuclear energy cannot be separated from the coming new international economic and social order. Technology influences goals. Although it exists to serve human needs, it can destroy human values, whether by the deliberate intent of oppressors or as a result of unintentional consequences. "Any sharp separation of technology from human values greatly oversimplifies the dialectics of the relation between technology and society."[29] The many international programs of the IAEA have shown how advanced technology can be used in the service of the highest human values. Such a demonstration is fundamental for the development of the kind of world ideology vital to any future world order.

Footnotes

1. International Atomic Energy Agency, The Annual Report for 1976 (Vienna: IAEA, 1977), p. 15.

2. International Atomic Energy Agency, IAEA Services and Assistance (Vienna: IAEA, 1974), pp. 9-11.

3. International Atomic Energy Agency, Isotopes in Day to Day Life (Vienna: IAEA, 1977).

4. International Atomic Energy Agency, The International Atomic Energy Agency: What It Is, What It Does (Vienna: IAEA, 1976), p. 14.

5. International Atomic Energy Agency, Safeguards -- Old and New (Vienna: IAEA, 1977), p. 2.

6. International Atomic Energy Agency, International Nuclear Safeguards (Vienna: IAEA, 1976), p. 2.

7. International Atomic Energy Agency, The Management of Radioactive Wastes (Vienna: IAEA, 1977), p. 2.

8. IAEA, IAEA Services and Assistance, p. 15.

9. IAEA, Annual Report for 1976, pp. 16-17.

10. "IAEA Training Activities Related to State Systems of Nuclear Materials Accountancy and Control," International Atomic Energy Agency Bulletin 19, 5 (October, 1977): 19.

11. IAEA, IAEA Services and Assistance, p. 25.

12. IAEA, Annual Report for 1976, p. 39.

13. IAEA, IAEA Services and Assistance, p. 25.

14. Ibid.

15. Ibid., pp. 31-34.

16. IAEA, 20 Years: International Atomic Energy Agency, 1957-1977 (Vienna: IAEA, 1977), p. 78.

17. IAEA, IAEA Services and Assistance, p. 35.

18. Ibid., p. 8.

19. IAEA, Annual Report for 1976, p. 14.

20. IAEA, IAEA Services and Assistance, p. 8.

21. IAEA, Annual Report for 1976, p. 61.

22. "IAEA Asked to Assess Role of Nuclear Power as Alternative Energy Source," UN Monthly Chronicle 12, 11 (December, 1976): 34.

23. "IAEA Safeguards Plan Aimed at Preventing Conversion of Nuclear Material to Military Uses," UN Monthly Chronicle 12, 8 (August-September, 1975): 46.

24. Kurt Waldheim, "The United Nations and the IAEA," International Atomic Energy Agency Bulletin 19, 6 (December, 1977): 4.

25. Amadou M. Cissé, "Transfer of Nuclear Technology to the Developing Countries," International Atomic Energy Agency Bulletin 19, 4 (August, 1977): 9.

26. Rurik Krymm, James A. Lane, and Ivan S. Zheludev, "Future Trends in Nuclear Power," International Atomic Energy Agency Bulletin 19, 4 (August, 1977): 54.

27. Gerald F. Tape, "The Next Twenty Years -- IAEA's Role," International Atomic Energy Agency Bulletin 19, 4 (August, 1977): 46.

28. "Statement of the Director General to the 21st Session of the General Conference of the IAEA," International Atomic Energy Agency Bulletin 19, 6 (December, 1977): 20.

29. "Public Acceptance of Nuclear Power -- Some Ethical Issues," International Atomic Energy Agency Bulletin 19, 6 (December, 1977): 55.

CHAPTER VII

THE IAEA AS A MODEL

The IAEA cannot be described as a model for world order in the sense of the preferred futuristic model offered by Falk. Neither can the IAEA Statute, its administrative machinery, and its staff be proposed as an apparatus that could somehow serve as an executive, legislative, and judicial basis for world order. In what sense, then, can the Agency be projected as a model for world order? The answer to this question can be given in terms of a summary of the important conditions and characteristics of world order covered in earlier chapters.

The summary consists of two parts. The first part summarizes the key concepts, variables, and discussion of models presented in Chapter II. The second part summarizes the discussion of the IAEA presented in Chapters III through VI. From these two summaries, the model of world order sought by this study will be evolved, being stated in terms of ten principles.

Summary of Chapter II

Morgenthau emphasized that international politics cannot be reduced to legal rules and institutions, any more than the American political scene can be explained in terms of the American Constitution, federal laws, and the agencies of the federal government. He also emphasized the idea that political power is a psychological relationship in addition to being one of pure military force. He stressed not so much the actual power arrangements as the moral consensus of modern state systems that makes actual raw power work. He viewed the existence of a world community as an essential condition for a world state. Especially effective for building a world community, in Morgenthau's view, are specialized agencies such as the IAEA, possessing autonomy, their own constitution, own budget, own policy making administrative bodies, and own membership, and owing their existence to agreements effected among a number of states, the identity of which differs from that which created other agencies.

Morgenthau regarded functional agencies such as the IAEA as important because they try to solve common problems which none of the particular states could have solved through its own efforts. By coordinating functions on a supranational level, functional agencies such as the IAEA use and develop the novel procedures of international government. They combine central direction in the execution

of policies with negotiated agreement, thereby combining the factual superiority of power and resources with the legal claim of all participants to equality, helping remove distinctions between international and domestic affairs and with it, the principle of nonintervention in the domestic affairs of other nations. They exercise a good deal of diplomacy: for Morgenthau, a key instrument in establishing and maintaining world peace and government.

Mitrany cited the importance of evolving world government by overlaying political divisions with a spreading web of international activities and agencies which care for common needs, as does the IAEA. It is through functional agencies that Mitrany visualized the growth of positive and constructive common work and of common habits and interests on the international level, making frontier lines meaningless in the face of a natural proliferation of common activities and common administrative agencies.

Black considered functional agencies such as the IAEA as those most likely to develop lives of their own, acquiring genuine supranational authority. The rapid growth of modern knowledge, including scientific technology, has made functions necessary that are beyond the capacities of a single state to control. International functionalism in the form of agencies such as the IAEA represents a growth of law more general than, superior to, and distinct from municipal and regional law. Because international or interregional

agencies are not immediately practicable, Black regarded functional agencies as an immediate practical alternative gradually moving toward a world perspective and world government.

Falk cautioned against equating international legal order or formal institutional arrangements with actual politics and power. For him, spheres of influence and the everyday activity of the various world functional agencies, especially the IAEA, are realistically closer to a world order than is, say, a world constitution. Furthermore, supranational professionalism, such as the extensive experience of the IAEA in supervising compliance with treaties and agreements as well as in technical operations and research, is viewed by Falk as important in developing international law. The everyday "rules of the game" and de facto patterns are more important for him than are formal treaties or established deliberative bodies.

Gottman's field theory of political geography emphasized the political unity evolving through the dynamics of interacting ideas. Consistently with this theory, the IAEA appeals to the basic desires for peace, health, and world prosperity which are common strands in the thought of nations throughout the world, endowing them with a great potential unifying capacity at the world level. The IAEA also stresses the functional approach to world unification, with its worldwide concern for social and economic needs in

relation to atomic technology and its applications.

Macropolitics as conceived by Reischauer emphasized cooperation instead of conflict, equity instead of inequality, and trust instead of fear, recognizing that the transition from micropolitics to macropolitics cannot be achieved by violence. In Reischauer's view, the gap between the rich nations and the poor ones is recognized as a major obstacle to world order. Moreover, a sense of world citizenship is basic to world order. All of these motifs are clearly in line with IAEA thought and experience.

Falk dwelt on an especially important principle of world reform: structural reform will come about neither as the result of a single constitutional event nor as the consequence of steady institutional expansion at the global level. He predicted that such reform would be preceded by a transitional period and process in which the functional agencies played a key role, with a final world or preferred model such as his coming about as an expression of an altered value consciousness and climate of aspiration. He maintained that, if these normative preconditions could not be satisfied, the actual structural reforms would be meaningless. Three principal objectives of his model for world order were the containment of international violence, an integrated international welfare system, and the achievement of human rights. He envisioned not a process based on world government solutions accomplished through

shifts of power and authority from state actors to a general purpose global actor, but a gradual buildup of role and capability for all states and a shift in their orientation. Falk's emphasis was on process and transformation. Rather than the imposition of world order on individual states striving for individual sovereignty, Falk conceived the transformation of present world order along lines and goals already indicated in his model.

Summary of Chapters III Through VI

The principal implication of the content of Chapter III was that the IAEA represents an elaborate structure which has evolved through considerable international experience in vital areas. Its membership is international and widespread, embracing every conceivable type of social, political, and economic system. In its role as inspector, it has had access to the internal systems of nations, thereby exercising the right of intervention in the internal affairs of individual nation-states. Its close cooperation with the UN and with organs related to the UN has provided it with extensive international experience and connections. Its plans for the regional development of atomic energy installations afford pilot models for other political, economic, and social planning on a regional scale. Its extensive services in successfully safeguarding atomic installations the world over has provided it with a unique background of experience not possessed by any other

international agency. It is largely autonomous, and its programs are both scientific and humanitarian, reflecting a superior world ideology. IAEA representatives have considerable diplomatic experience in treaty making on an international scale, exercising a jurisdiction accepted by individual nation-states.

Chapter III, with its detailed coverage of the IAEA's history, illustrated the essential role of diplomacy in the Agency's past development and successes. Beginning with the seemingly insurmountable obstacles between powers such as the US and the USSR, and leading to the actual establishment of the Agency in 1958, the underlying political give-and-take required in the movement toward world government in the face of nationalism was depicted in detail. The Non-Proliferation Treaty of 1968 exemplified the successful coordination of effort in the direction of détente and the control of atomic energy for peaceful purposes, while preventing its proliferation for enhanced weaponry. While admittedly not completely successful in bringing all nations of the world into one camp insofar as policies concerning atomic energy problems were concerned, it achieved outstanding successes in making major strides toward that goal, not the least of which was its task of negotiating the treaties between various signers of the NPT.

Chapter IV described the decision-making apparatus of the IAEA. It was explained how the IAEA functions in the

UN and in other systems, with special emphasis accorded to its role in international cooperation. Autonomous, the IAEA works in close cooperation with specialized agencies all over the world. It was demonstrated that the IAEA is both a highly effective liaison agent in the important matter of nuclear safeguards and a leader in the humanitarian role of scientific research and applications -- in energy production, agricultural expansion and modernization, food preservation, health and industrial promotion, and the like. In addition to acting as a clearinghouse for information and expertise between the atomic powers and other nations, the Agency has played a key role in maintaining international cooperation with regard to numerous aspects of nuclear power.

Chapter IV highlighted the IAEA structure and process of reaching agreements, taking account both of the balance of power and of democratic procedures. The IAEA was depicted as a leader in constantly organizing meetings and symposiums throughout the world and as successful in obtaining significant agreements.

Chapter IV emphasized the importance of the IAEA as a social entity with experience in world affairs, in contrast to the formal constitution legally defining it. While noting that lack of constitutional machinery may contribute to the failure of an institution, the chapter stressed that any international system must necessarily be

rooted in the minds of the people as well as in their governments, requiring the variable of a sufficiently broad world ideology. It was shown that the IAEA Statute expresses world ideology and that the formal structure outlined in the Statute reflects the total membership and its interests more accurately than did, say, the League of Nations. The IAEA, through its finer breakdown of geographic regions as a basis for representation on its Board of Governors, provides closer congruence between actual special interests and geopolitical realities.

Chapter IV demonstrated that the IAEA, as a functional agency, is in step with the increasingly greater use of scientific technology for humanitarian purposes. In summary, it was stated that the IAEA Statute has the advantages of (1) representation based on a realistic recognition of the geographic distribution of special interests, (2) power to make agreements with various nations that must surrender a part of their sovereignty under the agreement, (3) extensive contacts with other world organizations, and (4) intimate connections with the various scientific and technological movements basic to a future world order. While the IAEA was recognized as reflecting the various advantages essential in the movement toward a world authority, it was noted that a major limitation was the existing condition that nation-states insist on retaining their national autonomies and independent military

forces.

Chapter V dealt with the balance of power concept. Any effective, formal world constitution must account explicitly for the balance of power in both regional and national terms. Accordingly, social, political, and economic developmental conditions were identified as the crucial underlying factors in this determination. Weak and powerful nations were distinguished in terms of technological and energy development. Nations were viewed as capable of increasing individual strength through regional and special interest association, laying the experiential groundwork for the principle of regional association and law. The IAEA role in promoting the development of aspiring nations was interpreted as a major step in the direction of promoting conditions consistent with international cooperation and world order. Chapter V detailed the IAEA's handling of the difficult problem of developing atomic energy for peaceful uses in underdeveloped nations without having these nations also enter the atomic arms race, with the result that, among many nations of the world, the growth of military power has been limited. The hierarchical arrangements between dependent and independent nations were demonstrated to form a potential basis for regional affiliation, especially in world assemblies where power blocs tend to caucus in terms of regional affiliations. The IAEA was characterized as an agency

which, both in the past and at present, has achieved world cooperation based on consent and diplomacy. It was noted that, more important than its Statute, are its administrative machinery, experience, and worldwide organization, established in the course of activities covering several decades.

Chapter V also emphasized the IAEA's extensive alliance with the world scientific community and its experience in nuclear law over the decades.

Chapter VI provided a detailed outline of the various IAEA programs. This chapter described the IAEA's worldwide contribution to scientific and technological development, an important ingredient in any plan for world order. Here again, the dominant theme was international cooperation and activity. Various independent evaluations by authorities were cited, as well as the numerous conferences, symposiums, and seminars staged by the IAEA over the years. Especially cited were the IAEA's efforts in concluding safeguards agreements, its provision of worldwide technical assistance, its contributions to peace and economic development on an international scale, its flexibility in negotiations over the control of nuclear materials, and its overall service in the cause of the highest human ideals and values.

The Model

A number of principles emerge from the foregoing

summary, which not only describe the IAEA experience but are also capable of being used as criteria for evaluating potential institutions and activities conducive to world order and which, accordingly, can be projected as a model or guide for world order:

1. World Ideology. This ideology embraces not only human legal and civil rights, the equality of all nations, bridging of the gap between rich and poor, the control of arms, and peace thinking, but also the so-called welfare rights of individual health and prosperity. Its ultimate aim is a world psychology and world citizenship.

2. International Functionalism. International relations are based on the realities and dynamics of social, economic, and political dimensions as well as on world ideology. Coordination of scientific effort should be geared to the international level. International agencies or instruments of government should function in terms of commonly recognized needs, tending to equate international with domestic affairs, superseding national boundaries by serving common needs. International law must reflect international functionalism.

3. International Professionalism and Experience. Extensive experience in international conferences, world planning, treaty making and similar functions is essential. Even worldwide technological involvement can lead to a quasi-diplomatic corps wise to the ways of the world and of

foreign cultures, an essential precondition for a feeling of world citizenship.

4. International Autonomy. The agency or organ should be autonomous, having its own adequate budget; Statute, Charter, or Constitution; administrative organs; and unique international membership.

5. Geopolitical Basis of Membership. Membership should be comprehensive and worldwide, with the agency's organs represented on a realistic basis recognizing both geographical regions and individual political states.

6. International Intervention. The agency should seek to maximize its rights to international intervention, rights overriding the sovereign powers of individual nations. Initially, such rights need not be great, but they must be expanded with the passage of time.

7. World Peace. Emphasis should be on world peace, including arms control, atomic supervision, and provision for courts, commissions, rules, regulations, and special technologies and institutions connected with that effort.

8. Maximal International Connections. There should be a maximal establishment of relations with, and cooperation with, other international agencies such as regional organizations and commissions, world courts of law, functional agencies, and also individual states.

9. International Realism. Basically, such realism will involve international functionalism as well as an

approach based on moral consensus, cooperation, and diplomacy. It will recognize explicitly the various spheres of influence, everyday de facto activities, and ideologies. Movement toward world community and world ideology will be regarded as an evolutionary process gradually transforming existing conditions.

10. Regionalism. Regional associations should be encouraged, with emphasis on the emergence of regional law. Balance of power and spheres of influence should be recognized explicitly, the emphasis being on introducing more international actors into potential conflict spheres.

The questions raised early in the study regarding the IAEA and world government can now be addressed specifically. The first question asked was how the IAEA has succeeded in resolving delicate political problems and how the same techniques could be applied to resolve problems in a new world order. The two key words here are "experience" and "diplomacy." The analysis performed in the present study showed that world order based on a powerful central control is not a feasible concept either now or in the immediate future. The IAEA was given the task of concluding numerous treaties throughout the world under the terms of the NPT. Its successful treaty negotiations required the exercise of considerable diplomacy, now part of the Agency's experience.

The IAEA has more than just an experienced corps of

negotiators and successful worldwide experience to rely on as part of its technical apparatus for resolving world problems. To its international professionalism and experience it is possible to add the political impact of its world ideology and international functionalism. Realistic diplomacy requires ideology as well as realism. Especially influential in its negotiations are the Agency's efforts to bridge the gap betwen rich and poor, to bring about the control of arms, to establish legal and civil rights, and to improve the level of world health and prosperity through its technological assistance. The Agency is a functional one in which international relations are approached in terms of the realities and dynamics of social, economic, and political dimensions. Its coordination of scientific effort is directed toward the recognition of and service to common needs, superseding national boundaries.

Another question raised concerned the balance of world power. In view of the fact that nations differ in their power, needs, interests, and resources, how is world cooperation to be achieved, especially within a framework or institution of limited power? The preceding discussion of world ideology and world functionalism also applies here. Whether at the local or at the international level, consensus is a fundamental prerequisite for any form of government. Consensus is not likely to be obtained, at least on a worldwide basis, unless a world ideology suited

to the task is already in existence. Many clashes of military or economic power can be avoided through an equitable world ideology which treats "other" nations as equal partners, not as subservient colonials. Issues such as strategic arms limitations, oil embargoes, or defusion of the Middle East can depend as much, if not more, on the type of ideology sensed as they do on pure economic or military power. Unless social, economic, and political realities are recognized, as they are in functionalism, even the most powerful of nations will have its will stymied. The IAEA, through its particular kind of world ideology and functionalism, has established a model to be emulated in dealing with power, through experience and practice.

World ideology and functionalism are not the only possible basis for dealing with the power balance. The weak and the "have-nots" can combine on a regional and geographic basis to oppose the major powers. The institutional structure of the IAEA explicitly recognizes the geopolitical basis of membership. Thus, the Agency accepts geopolitical theory as one of the underlying realities of world government. While the Agency has not succeeded in removing atomic arsenals from the international scene, it has played a vital role in preventing the further proliferation of atomic weapons through its treaty making function under the provisions of the NPT. By improving the economic and social conditions of the weaker "have-nots," the Agency has helped

improve the balance of power, admittedly a vital factor in maintaining world peace. Through its regional and geographic basis for representation, the Agency has recognized a major element in the reality of power balance. Through the peaceful applications of atomic energy, the Agency has fostered the development of social and economic conditions which bring Third World nations into the power balance more rapidly.

The question of diplomacy versus pure power has, therefore, been answered. Diplomacy which takes into account world ideology, functionalism, regionalism, and geopolitical realities is the basis for power negotiations, and the essence of so-called realism. Of special value for this kind of diplomacy is extensive experience in international conferences, world planning, treaty making and similar functions. The worldwide technological involvement of the IAEA has led to a quasi-diplomatic corps experienced in world affairs and foreign cultures. This experience is an essential precondition for a feeling of world citizenship and is a means for resolving worldwide power conflicts.

The IAEA experience and its implications for a model of world order are more in line with Falk's emphasis on process and transformation than with a specific world constitution. The Agency's Statute is obviously a limited, although highly relevant, document insofar as a comprehensive world order is concerned. More importantly,

it is a statement of purpose and an institutional means for an approach consistent with correct process and gradual transformation in directions summarized in the ten-part model presented in this chapter. The model reflects the IAEA experience and movement in terms of the key variables emerging from the total analysis.

The model arrived at is neither a governmental nor a political theory of world organization. It avoids purely legalistic conceptions of world order and includes as much of the extragovernmental or international setting of international relations as is possible.

The model is normative in concerning itself with the "correct" social and political variables underlying international relations. It seeks a durable and just system of world order. As in Falk's approach, justice is given equal status with order. Rather than trying to arrive at a finalized and formal legal conception, the present inquiry was concerned more with the process of creating rules, procedures, and institutions designed to contain large-scale violence. It recognized explicitly the need for achieving greater economic equality among races, regions, and nation-states, and for obtaining certain minimum conditions of human dignity for individuals and peoples throughout the world.

The study noted the trend toward world government, but did not foresee a just outcome as inevitable.

Regression is as likely as progression in the realm of social justice. Each of the ten principles included in the model emerging from the study were regarded as necessary conceptual goals which must be stated explicitly and followed as guides to world order. In short, the degree of progress made will depend on the proper concept of world order, one which weighs and balances all of the various dimensions summarized in the model.

Falk cautions that the moral or ideological universalism presumably present in the principal cultures of the world today may be deceptive, "as in those circumstances where it possesses a militant crusading spirit that makes the ideal of oneness depend upon the prior elimination of otherness."[1] At the same time, as Falk observes, there are many indications of a widely shared cross-cultural commitment to the ideal of a truly interdependent human community, evidenced by the commitment found in major cultural, religious, and philosophical traditions throughout the world. Falk asserts that the ideal of the unity of mankind and the dream of its realization have motivated mankind since the dawn of history. He believes that recent times have reflected the ancient Stoic sense of the unity of mankind as the only meaningful basis for the social and political organization of human affairs.[2] In brief, a world community must precede a world state.

Falk points out that the technological apparatus

needed for the global management of human affairs is now available. Advances in the technology of communication and transportation have made possible a highly centralized world government. Reinhold Niebuhr has outlined the potential for atomic global annihilation graphically as another motive for the acceptance of world government.[3] Falk notes that problems of pollution, population control, and resource conservation would be far more controllable if an ideal world community were given political reality.

Falk regards self-perpetuating national governments premised on international rivalry as a major stumbling block to world order. Group identity on the national level often appears to depend on the existence of the hostile "other." Long-standing traditions seem to encourage nation-states to hold together against threats from the outside.

> Without enemies there is little reason to suppose that some of the larger political and social units could be sustained. In the literature of science fiction, one frequently encounters the idea that world government emerges as a response to the threat of an extraterrestrial aggressor. Such an idea embodies the insight that the process of voluntary political unification, to be carried beyond such primary groupings as family, tribe, or village, and certainly beyond the national level, requires the catalytic energy provided by a common external enemy.[4]

Falk rejects global unification based on coercion along imperial lines, such an approach containing within itself the seeds of its own destruction. "The task for the future is not one of establishing world order in a situation of international anarchy, but rather one of transforming

world order in the direction of the three goals postulated above [containment of large-scale international violence, an integrated international welfare system, and the attainment of minimum human rights]."[5] Such also is the underlying assumption of the model of world order presented in this chapter.

Galtung points out that the typology of peace models is a profuse one. He chooses to initiate his own approach by asserting that violence need not be viewed as entirely random: it is possible to specify conditions so that its presence -- or absence -- becomes nearly certain. Galtung assumes further that it is possible to specify the conditions of violence by making use of ultimate conditions outside the violent individual. He does not deny that a violent act can be traced back to conditions inside the violent person, but he does not consider these conditions as the ultimate causes. "Violence is not seen as innate, inherent in man, but as ultimately, in the final analysis, conditioned by external circumstances."[6] The present world model, with its ten principles each pointing to a specific circumstance or condition, can thus be thought of as a model for world peace. Each principle of the model is a guide to activity or "peace thinking" which creates the conditions of world order and peace.

The eighth principle of the model, that of maximal international connections, provides an important condition

for the development and growth of an institutional manifestation of world order. The existence of worldwide commitments and identifications facilitates the process of "selling" the members of the international community on the idea of world cooperation. Principle Four of the model, international autonomy, points to the importance of an agency relatively free of control by any one nation-state; otherwise, few nations would trust it as a means for moving toward world government which treats all nations impartially. Principle Six of the model, international intervention, is essential for any organ with aspirations for world status and for becoming an agency of world control. International law means that individual nation-states are not above the law and that some agency of world government must have the right of intervention. The IAEA experience has involved all three of these important principles to a greater or lesser degree. In this sense (consistency with important principles underlying the movement toward conditions of world government), the IAEA embodies major elements of the process ultimately leading to institutionalized world order.

The model described in this chapter presents the conditions, the processes, and the goals of world order. It is out of such a model that specific legal and political models of international order can and will arise.

Admittedly, there are many specifics for which such

a model cannot account directly or which it cannot directly shape. These include the monetary dilemma, world inflation, the population explosion, armament and disarmament, trade barriers, ethnic and racial conflicts, pollution controls, religious and philosophical ideology conflicts, and many others. Nevertheless, the model does provide a broad framework in which such problems can increasingly be brought under the aegis of international purview.

As a kind of checklist of things remaining to be done or actions needing to be taken, the model is an excellent device. Theories or models are all too often one-sided in the sense that they perform their analyses and offer recommendations primarily from one point of view, considering only a narrow range of experience. Realism requires a balance achieved only through a preliminary and comprehensive overview, one embodied in the model presented here. Within any one of its ten areas of consideration, elaborate theories are possible, all of them valid and all of them contributing to the overall goal of world order. For example, the principle of international realism leads in the direction of Morgenthau's political analysis and Jacob and Atherton's functionalism. The principle of a geopolitical basis for membership leads to the exploration of the implications of geopolitics. Similarly, each principle suggests a number of special studies reflecting highly specialized and specific approaches to various

aspects of the problem of the present research.

The study began by considering two natural questions: What are the conditions for, and what are the obstacles to, world peace? The answers to these and related questions can most profitably be pursued in relation to the ten areas of thought outlined by the model. Regarded as a statement of ten criteria, the model leads naturally to a consideration both of the obstacles to, and of the conditions necessary for, world peace.

The advantage of the model is that each principle simultaneously states both the causes of and the cure for world disorder. Thus, the lack of a world ideology is a cause of world conflict, with the growth of this ideology a curative development. The lack of international functionalism can cause international conflict through unrealistic political, economic, and social policies, and improvement of relations in this respect can be a giant step forward toward world betterment. So is it with each of the other eight variables of the model. Each one pinpoints a problem area with its numerous theoretical elaborations which identify and resolve the problem. Each principle reflects many of the major emphases found in various theoretical orientations to the problem of world peace and order.

That the model does not constitute a rigorous set of prescriptions or a legal constitution is not a serious

limitation. The advantages of the model, just discussed, are sufficient to offset the disappointment growing out of its inability to provide a presumably foolproof remedy, or the solution. The reality of world government must evolve out of an ideal social order. While certain social laws can be identified, little can be achieved as the consequence of some combination of "inevitable" movements or quantitative laws such as those found in population studies. Social movement is a response to actions based on ideals and reasoned positions, without which the actions probably do not materialize. The model described in this chapter provides the ideal and reasoned impetus within those areas of social life and thought that undergird any significant movement toward world order. It is both an idealistic guide and a practical format. Its comprehensiveness omits few if any of the considerations essential to a realistic quest for world order, an outcome that began with -- and eventually included -- elements of the IAEA experience.

Footnotes

1. Richard A. Falk, "The Trend Toward World Community: An Inventory of Issues," in The Search for World Order, ed. A. Lepansky et al. (New York: Appleton-Century-Crofts, 1971).

2. Ibid.

3. Reinhold Niebuhr, The Children of Light and the Children of Darkness (New York: Charles Scribner's Sons, 1959).

4. Falk, "The Trend Toward World Community," p. 356.

5. Ibid., p. 357.

6. Johan Galtung, "Peace Thinking," in The Search for World Order, p. 122.

CHAPTER VIII

SUMMARY, THE MODEL, AND CONCLUSION

Summary

The study began with a number of observations and assumptions. Foremost of these was the observation that the world of today is shrinking in terms of communication speed and physical access. One consequence of this shrinkage is that the poverty-ridden come face to face with the powerful and the wealthy. Problems of worldwide conflict, overpopulation, and emerging Third World nations are magnified in an increasingly interdependent world. The threat of atomic annihilation is forcing nations to take a new look at the world situation, one in which war is no longer acceptable as a solution to the problems of mankind. More and more, the realization is evolving of the need for a new world order established and maintained through effective world organization.

It was also noted that historical trends have represented a definite movement toward ever larger units of social cooperation. While World War I and World War II resulted in models of world government, the League of

Nations and the United Nations, neither of these organizations ever achieved genuine world peace. Neither of them exemplified the kind of effective world organization now needed.

Obstacles to world order were also examined, not the least of them being nationalism and patriotism. The assumption that an unalterable human nature makes the triumph of nationalism inevitable contradicts the basic premise of education, which is that human nature most assuredly can be influenced. The study assumed that it must be influenced if the world is to survive with meaningful purpose. The potentially destructive forces of nationalism were assumed to be convertible into world loyalty and international cooperation based on friendship rather than on power.

A number of conditions prerequisite to world order were identified. The most important of these was an appropriate world ideology permitting the evolution of an effective world politics and institutional apparatus. However, ideals by themselves were not considered enough. A relevant world ideology was defined as one which is related realistically to an understanding of the political, economic, and social dimensions of national and international life. Macropolitical concepts and the functional approach were made to supplement an idealism in which violent solutions were replaced by concepts of power

balance and world diplomacy.

Accordingly, while the "realistic" demands of functionalism and diplomacy were recognized, the role of world ideology was accepted as fundamental and vital to any successful movement on the part of humanity toward world order. World ideology was defined not only in terms of human legal and civil rights, the equality of all nations, elimination of the gap between the rich and the poor, arms control and thought about peace, but also in terms of the so-called welfare rights of individual health and prosperity, with the ultimate aim of a world psychology and world citizenship.

It was recognized that a formal written document cannot by itself constitute a model for world government, nor can an established administrative machinery. It was noted that a successful model for world order would have to consider the full range of variables determining both the obstacles to, and the conditions for, world order.

The Problem

Against the foregoing background observations and assumptions, the general problem of the study emerged as that of finding or developing a feasible model for world order. In particular, the International Atomic Energy Agency (IAEA) experience, its formal Statute, and its staff were considered as the basis for a model of world government. An autonomous body related to the United

Nations, the successes it has enjoyed were believed to result from the sound processes undergirding it. An international model reflecting the IAEA experience could provide the stimulus for a cooperative effort, for single-minded action on the international stage. A relevant subproblem was to identify the kind of model needed and the criteria useful in establishing the model.

A number of questions were raised. How has the IAEA succeeded in resolving delicate political problems, and how could the techniques it has used be applied to solving the problems which would be faced by a world government today? What roles do world ideology and functionalism play in the attempt to establish cooperation within a framework or world institution of limited power? What are some of the basic realities underlying idealistic efforts in the direction of world government, including geopolitics, regionalism, economics, balance of power, atomic power, and wealth versus poverty? What is the role of diplomacy as contrasted with pure political, economic, and military power? What is the role of international law or of a formal written document such as a constitution?

Key Variables and Concepts

Three major concepts useful in projecting a model of world order were isolated: macropolitics, functionalism, and systems thinking. The key variables to be accounted for within this conceptual framework included nationalism,

regionalism, sovereignty, political power, balance of power, ideology (morality, ethics, and human rights as well as "welfare" variables involving the political, economic, and social order), international law, world peace, disarmament, and diplomacy.

The chief concern of macropolitics is with worldwide political interaction. It emphasizes cooperation, equality, trust, and balance of power. Fundamental to it is the sense of world citizenship.

The principal characteristic of the functional approach is its definition of needs and problems in terms of political, economic, and social experience. In this sense, it is realistic and based on personal action, environmental response, and adjusted action.

The primary function of systems analysis is as a conceptual tool useful in evolving a world model based on macropolitical and functional ideas. It seeks to interrelate the various elements of the total environment, including political, economic, social, and ecological elements. Important variables include input, output, analysis, feedback, demands, decisions, actions, and environment. It recognizes explicitly that a system must be capable of responding to problems with measures successful in terms of the environment it serves. Specific content relevant to world systems thinking includes world trade, monetary policies, the population explosion, outer space,

arms control, and human rights.

The study accepted Falk's three principal objectives of world order: (1) containment of large-scale international violence and the regulation of multiple technologies of mass destruction and mass manipulation; (2) an integrated international welfare system concerned with maintaining a minimum standard of living throughout the world and devoted to the reduction of economic disparities between the rich and the poor, and (3) the realization of minimum human rights assuring dignity for oppressed groups and liberty for oppressed individuals. Also accepted were Falk's beliefs that the buildup of functional agencies at the regional and world level, a steady growth in regional general purpose agencies, and an accelerated rate of growth in global general purpose organs are all of major importance to world government. Falk's belief that movement toward world government will take the form of a gradual process of transformation was another premise of the study. Instead of a world government based on shifts of authority and power from national states, Falk envisions a gradual buildup of regional agencies coupled with a shift in orientation from local to more global institutions.

The IAEA Experience

The key variables and concepts essential to a comprehensive model of world order are reflected both implicitly and explicitly in the IAEA experience and

structure. Its inception some 20 years ago resulted from the need for controlling atomic materials and for using them in the pursuit of peaceful purposes and research, with a major goal being to prevent the proliferation of atomic weapons. Although autonomous, the Agency has a working relationship with the various organs and functional agencies of the United Nations. It has been especially prominent in the movement toward world order because it is a functional agency, the everyday activities of which create necessary conditions and experiences among nations on a worldwide basis in harmony with an effective and realistic world ideology including the highest ideals of human dignity and individualism.

The IAEA's membership includes 110 of the world's nations, exhibiting tremendous political, economic, and social differences. The composition of the IAEA's Board of Governors recognizes the important principles of regionalism and geopolitical reality. Its extensive services have provided considerable background and experience in international negotiations. Its various international programs are both scientific and humanitarian, carried out on an international scale by Agency representatives accepted by individual states.

From its very inception, the IAEA has been involved in delicate negotiations among the powerful nuclear nations. Beginning with Harry Truman and the Baruch Proposal,

continuing with Eisenhower and the subsequent 1968 Non-Proliferation Treaty (NPT), the Agency has been surrounded by controversial issues and has been immersed in diplomatic give-and-take. The IAEA has been particularly active in holding world conferences and concluding treaties with signatories to the NPT.

The Agency acts as a clearinghouse for information about the peaceful uses of nuclear power and radioisotopes, sharing information with the underdeveloped nations of the world. In addition to granting technical assistance, the IAEA awards numerous fellowships to aspiring young scientists in technical fields. It is devoted to establishing international integrated welfare systems and minimum living standards, as well as to reducing economic disparities between the rich and the poor. It has a long history of concern for the needs of the Third World and of underdeveloped nations in general, evident in its technical assistance and negotiations.

The Agency offers vital services to the poorer nations through its scientific assistance and research programs. It has established worldwide projects involving food, agriculture, medicine, and environmental studies. It cooperates with many other international agencies in these endeavors. Its numerous fellowship grants, consulting staffs of experts, conferences, nuclear safeguard agreements and treaties, and scientific assistance programs the world

over have given it an international reputation and experience in the area of constructive social development.

In conducting nuclear safeguards inspections, the IAEA cuts across national boundaries. Its power of inspection and the various treaties arranged by the Agency have laid the groundwork for individual nations to yield some of their sovereignty in certain areas. The IAEA experience exemplifies how an international agency can be used to achieve objectives the realization of which might otherwise be impossible -- by individual nations relinquishing some of their national sovereignty. Through its role in regulating the technologies of mass destruction and mass manipulation, it has contributed greatly to containing large scale international violence.

Cooperation and diplomacy have been fundamental approaches in the IAEA experience. It has the willing cooperation of numerous scientists of international reputation. Its successful organization of regional and interregional conferences has created a basis for a great deal of international cooperation. The dependence of many nations on the IAEA has not developed in the context of power politics or expediency; rather, it has represented positive need fulfillment without involving power politics or special caucuses in world parliamentary bodies. The IAEA has helped establish the policy of consent and cooperation in areas fundamental to world social development. It has

also established the principle of constructive change in scientific areas directly related to economic and social development.

The IAEA's Statute is consistent with the ideological basis for world order: it seeks to use atomic energy for peace, health, and prosperity throughout the world, to restrict use of atomic energy to nonmilitary purposes, and to achieve peace based on justice. It is realistic; seats on its Board of Governors are allotted on a geographic basis explicitly recognizing various world power blocs and regional realities. Its very nature as an autonomous and functional agency interweaves its activities inextricably with world realities. At the same time, it accepts another kind of reality in the form of a world ideology recognizing the political, economic, and social rights and needs of the various populations of the world. It also accepts the reality that justice must be ingrained in the minds and hearts of people, not only in international law and in power-backed legal and social institutions.

Over a period of several decades, the IAEA has developed a worldwide organization and extensive administrative machinery and experience. It possesses institutional flexibility and diplomatic orientation, and can easily adapt itself to evolving world needs. It is a functional agency reflecting the highest level of world ideology in the spirit of international cooperation. Its

participation in developing nuclear law has furthered both international consciousness and international law. Nuclear energy will play an increasingly important role in the international economic order of the future, suggesting that the role of the IAEA will become even more important than it has been so far.

The Model

The model was a natural outcome of a review of major concepts and variables, and of the IAEA. The model consisted of ten criteria or principles capable of serving as a guide or evaluative checklist in assessing any proposed plan of world order. The model reflected the experience and international operations of the IAEA. The ten criteria or principles follow:

1. World Ideology.
2. International Functionalism.
3. International Professionalism and Experience.
4. International Autonomy.
5. Geopolitical Basis of Membership.
6. International Intervention.
7. World Peace.
8. Maximal International Connections.
9. International Realism.
10. Regionalism.

Any successful plan for world order must reflect a world ideology including both human rights and political,

economic, and social rights. The principle of international functionalism will help avoid the pitfalls of unrealistic idealism. The plan must be based on international professionalism and experience, with diplomacy a major implemental tool. The planned institutional framework must provide for maximum international autonomy in the form of its own organs, budget, statute, and administrative bodies. Membership in the body should be worldwide, reflected in a geopolitical basis of membership taking geopolitical realities into consideration. The plan should provide for organs possessing the right of international intervention to a certain degree, a right requiring some diminution of national sovereignty.

World peace must be emphasized, including arms control, atomic supervision, and provisions for courts, commissions, rules, and regulations. There should be maximal international connections with other international agencies, including regional organizations and commissions, courts of law, functional agencies, and individual states. International realism should be a fundamental principle: functionalism should be emphasized in combination with an approach based on moral consensus, cooperation, and diplomacy. A major aim snould be acnieving a balance of power which recognizes various spheres of influence in which movement toward a world community and a world ideology is conceived of as an evolutionary process, gradually

transforming existing world conditions. Finally, regionalism should be encouraged as an intermediary step toward international organization. Here again, balance of power and spheres of influence are important variables, with the ultimate goal being to bring more international actors into potential conflict spheres in order to achieve viable power balances.

Criteria for a Model

In its simplest form, a model for government, whether national or international, may consist of a document such as the United States Constitution or the IAEA Statute, or of a constitutional model. A more complete model may include the various administrative apparatuses and personnel, describing the actual functioning of the government outlined in the constitutional model. The preferred Falk model of world government, described at some length in Chapter II of this study, is essentially this fuller kind of administrative model. It includes the principal organs of government, the rules governing the composition of each organ, how the organs are to function, and the relationship of each one to the others, all combined into one comprehensive schematic complete with the horizontal and vertical ramification of the organizational "tree" or structure.

A still more comprehensive model may consider the various social, ideological, and geopolitical conditions of

government, reflecting them as functional and ideological realities to be accounted for in the model of government. Typically, the various conditions, processes, and goals underlying a model and determining its social realization are listed and discussed separately from the constitutional or administrative model.

The present study did not seek to project the existing constitutional and administrative IAEA model as the basis for a model of world government, although these aspects of the IAEA were relevant to the study. Instead, the model formulated was an explicit statement of the conditions, processes, and goals undergirding the movement toward world government and actually constituting that state of affairs called "government." These three fundamental aspects of world government were explained in terms of the ten principles of the model.

Conditions of World Government

The principle of international functionalism explicitly recognizes the dynamics and realities of political, economic, and social variables as preconditions of world order. One such precondition is peace characterized by arms control and by legal and welfare rights in an atmosphere of national equality, all provided for under the headings of world ideology and world peace. Global thinking, another important precondition for world order, is mirrored in the principles of geopolitical basis

for membership, regionalism, and an international realism which recognizes spheres of influence and power balances. The world authority or agency must be suited to its role as an international actor, with such role requirements being delineated under the heading of international autonomy, maximal international connections, and international professionalism and experience.

Processes of World Government

Probably the most important process in the evolution of world government is the gradual transformation of existing conditions into conditions favorable to world government, as already noted in connection with the principle of international realism. Especially relevant to a realistic world process is international functionalism, which relates the process of internationalization to political, economic, and social needs rather than only to ideology. The requirement of international professionalism and experience is vital to the successful functioning of any international agency. The model recognizes the importance of diplomacy and of a balance of power, and the need for various international organizations such as functional agencies, world courts and commissions, and regional organizations.

Goals of World Government

Because the ten principles of the model are important conditions for world government, they are also goals. The principles describe certain desirable processes leading to world order, making these processes goals. The model provides idealistic goals, exemplified by the principles of world ideology and world peace. The goals are, accordingly, realistic as well as idealistic, providing a balanced approach offering not merely a direction but a way of moving in that direction.

Conclusions

Because the model just presented does not project the specific IAEA structure as a model for world government, it might more appropriately be termed the Mehring model. However, the Mehring model does reflect the IAEA experience and structure, and was inspired by a review of the Agency's structure and past accomplishments. While not a constitutional or administrative model, the Mehring model does include the key conditions, processes, and goals essential to world order.

The Mehring model, more than do others, points out the obstacles to world order indirectly. Systems approaches such as Galtung's are very useful in establishing conceptual frameworks or various theoretical constructs, but they are synthetic rather than analytic and cannot, by their very nature, lead to, or assist much in the discovery of, the

major specific variables of a situation. Just as a systems approach could not by itself have deduced the rich documentation of the American Mind portrayed by H. S. Commager, a systems approach by itself could not arrive at the ten principles of the Mehring model: one largely the result of a functional approach, world ideology, and synthesis of the IAEA experience.

The Mehring model addresses itself to determining the necessary and sufficient conditions for world peace. It tries to show what it is that will bring nations into cooperative negotiation and peaceful interaction. It emphasizes not constitutional documents but processes, organizations, and methods for dealing with real or perceived problems. It seeks to promote the positive factors of international relations. It attempts to discard the oversimplified power theory of international relations by replacing it with a more realistic world view embracing the general welfare of mankind as a whole. It proposes to wage peace in a disarmed world through its commitment to nonviolent solutions to international conflict, emphasizing the scientific work of functional agencies such as the IAEA. It provides a description and analysis of those circumstances under which nations move toward rational conflict resolution, with disagreements resolved by negotiations, compromise, and conciliation rather than by violence. Although not a theory as such, it does include a

descriptive analysis of integrative and disintegrative processes modifying the group structure of world politics and international interaction.

While the Mehring model focuses on breaking down the national barriers of isolation, it cannot guarantee such an outcome. World ideology will help bridge the gap between national cultures. Yet, the realities of limited war and of nuclear diplomacy are serious obstacles that a mere model cannot remove. Spanier notes that: "It is a major paradox of our age that, despite the devastating destructiveness of nuclear weapons, the dependence on military force to preserve the international balance of power is perhaps greater now than ever before in history because the traditionally nonmilitary means of maintaining that balance no longer exist."[1] The consensus formerly shared by the old ruling classes of Europe has been replaced by a new political-moral conflict which is bipolar in terms of power. This change makes it difficult or impossible for nations to shift from one ideological bloc to another and eliminates flexible power balances. At the same time, the former limitation on national power has vanished with the development of weapons enabling one nation to destroy the entire world.

Balance of Power: New Alignments and Ideologies

A balance of power is now achieved by mutual deterrence, representing a reign of terror: the threat of massive retaliation. That reign of terror has broken down into numerous individual brushfires involving conventional guerrilla warfare and nuclear blackmail, with limited demands and limited concessions -- diplomatic means are used to create "grave situations" which never materialize, but which could materialize. Moral neutrality has become an impossibility. According to Spanier, "The leaders of the new countries simply view the East-West conflict from a different perspective."[2] Spanier believes that, in the case of all of the new nations, it is the response to the revolution of rising expectations that will be decisive. For this reason, the principle of international functionalism may prove to be more valuable than will world ideology in preventing the swing of balance one way or another, to the East or to the West.

Yet, world ideology cannot be discarded as mere idealism with only indirect, secondary, or long-term importance. Spanier points out that asserting their nationalism enables the masses to identify themselves with a hero -- and vice versa. Unless the underdeveloped and poorer nations are accepted as equals ideologically, the typical Third World leader will use nationalism both as a tool and as a need serving the purposes of identity and

national survival: "A nationalist foreign policy is thus a psychological imperative for him."[3]

Spanier notes that the bipolar age of the immediate postwar years is slowly passing. As new nations -- India, Brazil, Nigeria, and others -- gradually modernize and become major powers, the world tends to become more pluralistic. "The French challenge of the United States in NATO and the Chinese Communist challenge of the Soviet leadership of the Comunist bloc during the late 1950's signaled the end of the 'good old days,' when America and Russia reigned virtually supreme within their respective alliances."[4]

Care must be taken not to equate realism with a blind disregard for the power of ideology, especially in the form of ideals. Functionalism should not be equated with hard "dollar" diplomacy in which human rights and ideals are bartered away for social security or military advantage. While thinkers such as Hans Morgenthau warn against "mere idealism," it is often precisely those "mere" ideals and values, and their "naive" statement, which win the support of those looking out for their own commercial or power interests, especially the "have-not" nations or Third World countries. The members of OPEC might have acted differently if they had had greater trust in those nations whose economies they hurt by the "hard-line" OPEC oil embargo in 1973. Trust is not necessarily a product of the

marketplace: it develops in relation to a perceived set of beliefs or a world ideology. Covert cynical rejection of human rights is sensed and responded to -- indirectly, through economic or political retaliation.

Some Major, Immediate Problems

An immediate problem for world development is the effective transfer of skills and resources to less developed countries through bilateral and multilateral channels. Gardner stresses the importance of international institutions to the United States: they help America considerably in its trade relationships with other nations, in a rapidly changing world economy. However, such international cooperation and benefits are confronted by the challenge of trade barriers impairing the economic efficiency and political unity of the North Atlantic Community and Japan. A second challenge is finding ways of handling the special problems affecting the trade of the underdeveloped nations. "International organizations are now the focus of efforts to cope with both of these challenges."[5]

The monetary dilemma is another problem about which not enough can be said. Even the finest plan of world government cannot flourish if a weak international monetary system compels nations to restrict their foreign trade or to deflate their own economies. Assistance to developing countries cannot succeed without effective financial

cooperation. According to Gardner, the pursuit of an expanding world economy demands action in aid, trade, and monetary arrangements. "Progress in any one area ultimately depends on progress in the other two."[6]

Another dilemma is that of the population explosion. No world model can succeed in the face of overpopulated regions of the world living in poverty. The Gross National Product does not measure economic progress adequately. "The object of economic development is the welfare and dignity of the individual human being."[7] If the number of human beings added to a nation increases without restraint, real economic progress will be trapped on an ever faster moving treadmill leading nowhere.

Space explorers have replaced the old world adventurers. The exploration of space is the newest challenge to the human race. It involves more than mere adventure or new frontiers of knowledge to be conquered. Gardner recognizes in it the seed of greater international cooperation: "The realm of outer space engenders among its pioneers a spirit of cooperation not found as readily within conventional boundaries."[8] Concern with outer space is not a national experience, but an international, global one.

Diplomacy and International Negotiations

According to Hans Morgenthau, "There is nothing spectacular, fascinating, or inspiring, at least for the people at large, in the business of diplomacy."[9] It is this

apparently peripheral function which may play a decisive role in establishing and maintaining world order and peace. Plans for free trade, arbitration, disarmament, collective security, universal socialism, international government, and the world state are frequently offered as solutions to world problems. However, day-to-day functioning in these areas requires the "accommodating" techniques of diplomacy. "As the integration of domestic society and its peace develop from the unspectacular and almost unnoticed day-by-day operations of the techniques of accommodation and change, so the ultimate ideal of international life -- that is, to transcend itself in a supranational society -- must await its realization from the techniques of persuasion, negotiation, and pressures, which are the traditional instruments of diplomacy."[10]

While diplomacy has failed as well as succeeded in preventing wars, Morgenthau points out that failures are frequently attributable to the fact that the parties involved do not want a negotiated settlement, or any settlement at all, for that matter. Diplomacy, however, is not enough: "It is only when nations have surrendered to a higher authority the means of destruction which modern technology has put in their hands -- when they have given up their sovereignty -- that international peace can be made as secure as domestic peace."[11]

As far back as in 1948, Winston Churchill called for

peace through accommodation, urging that the Western democracies take the initiative in asking the Soviets for a settlement. Although he knew that it was difficult to reason or to argue with the Communists, "It is, however, possible to deal with them on a fair, realistic basis, and, in my experience, they will keep their bargains as long as it is in their interest to do so, which might, in this grave matter, be a long time, once things are settled."[12]

Such relatively cynical appraisals of the Soviets are not necessarily the most realistic or necessarily the only true evaluations of the current situation. In the mid-1960's, according to Dougherty, a maturation process toward the arms control problem became observable. Issues such as total disarmament, the economics of large-scale arms reductions, and the strengthening of international peacekeeping machinery during the transition to a disarmed world were replaced by "immediate and realistic problems" such as the impact of arms negotiations on the Atlantic alliance and the future status of Germany, decisions needing to be made with respect to ballistic missile defenses, the proliferation of nuclear weapons, and the applicability of arms control concepts to waging limited war in Vietnam and elsewhere. "It is now widely conceded that both the Soviet Union and the United States have, since the early part of 1963, shifted their attention in international negotiations away from general and complete disarmament toward partial

arms control and limitation measures."[13]

Statesmen and the public have become increasingly aware of the subject of arms control and disarmament. Alexander is of the opinion that most of the world recognizes the fact that armed strength alone cannot guarantee national security: that such issues are inseparable from political questions. A favorable trend has been the increase of exchanges between different nations: between the northern and southern hemispheres and between the members of the Soviet bloc and the rest of the world, such exchanges accompanying the increased awareness among the richer nations that the developing states need help. The wasteful nature of defense spending is being emphasized more and more. Considerable expertise in, and knowledge of, arms controls and disarmament have developed throughout the world. "The International Atomic Energy Agency, which had its beginnings in 1956, and which is now a valid and going concern with participation by East and West and non-aligned, has established an effective method of inspection to insure the peaceful use of the atomic energy produced by the plants which it inspects."[14]

Dangerous Trends

There are a number of obstacles in the path of the favorable trends discussed above. Alexander enumerates various dangerous trends: the accelerating pace of technological development which provides capabilities for

destruction without compensating defenses; an inability to bridge the gap between the American view that agreements must be verifiable and Russian objections to intrusion and relinquishment of sovereignty; the accelerating birth rate in many parts of the world where poverty and inequality constitute a fertile ground for further political disputes; the international sale of weapons; and the all too frequent outbreak of what are now known as "conventional" wars. Despite these negative trends, Alexander suggests that "Prudent players, as the stakes rise, are more careful . . . . No matter what happens, we should keep thinking and communicating."[15]

Changing Global Realities

International law needs to reflect the new realities of the social sciences and of contemporary politics, especially geopolitics. It is because institutions do not reflect such realities that they often fail. According to de Blij, the modern state, like the city-state and the feudal fortress preceding it, is no longer capable of functioning in the manner in which it was originally intended to function: technology has overtaken it. "The inviolability of its boundaries, the impregnability of its heartland -- these are lost desires as artificial satellites inspect the terrain from above and missiles halfway around the globe are poised to strike at the sources of power."[16]

De Blij enumerates seven major emerging politico-

geographical realities. The first four concern world patterns; the last three, specific regions:

1. The emergence of world ideological-ethnic regions and regional cores.

2. The development of supranational entities and alliances.

3. The evolution and rapid decay of buffer zones.

4. The rise of regionalism and national tribalism within states.

5. The eastward development of the Soviet power core.

6. The ascent of China to world power.

7. The growing significance of the Pacific Ocean.[17]

These and other new realities highlight the prevalence of newness and the changing nature of change itself. A necessity for "multilevel concepts and . . . multilevel policies in the new era"[18] now exists.

In spite of the need for greater cosmopolitanism and increased thinking on a world scale, modern developments have counteracted this need in at least some ways. "The cosmopolitan diplomat who would serve any master has been superseded by the national diplomat who serves only his own nation-state."[19] The traditional European diplomat has been transnational in nature, whereas some European states have now undertaken to immunize their representatives against broader ties of respect and sentiment.

However, the relative ease of communication in today's world creates opportunities for quasi-official and unofficial diplomatic contacts. Not only diplomats, but also legislators go abroad, engaging in direct intercourse with foreign elites at various levels. Even branches of the armed services may establish similar contacts, sometimes working at cross purposes with their foreign offices. "Such uncoordinated diplomatic activities, though they increase the difficulty of disciplined policy formation, prepare the way for the cross-national strategies that consolidate a world constitutive process."[20]

World Politics and Political Parties

Parties are an important feature of any modern political order. Yet, their relationship to world politics is seldom elaborated. Modelski raises some interesting questions, in this connection: Is a party system a necessary element of a modern world order? Under what conditions and with what results could such a system develop on the world scene? Modelski foresees the emergence of world party politics in which world parties (systems both of conflict and of cooperation) develop around world political institutions such as the United Nations, concerning themselves with world issues such as colonialism. These parties will be able to "contest and influence the process of debate and decision and seek to move events in directions desired by them."[21] Modelski expects such world parties to

be stable, permanent organizations focusing on world issues and acting on behalf of world, not national, interests. The parties may or may not be geared to politics at the national or local level.

Modelski believes that the prerequisite world society capable of generating world politics will revolve around international activities such as foreign trade, research laboratories such as those with which the IAEA is involved, and other aspects of global communication. "The principal components of this society would be the world's political institutions: the United Nations family, its members, and its associated and consultative organizations; the world economy which is composed of the world financial system, international corporations, global transport and communications networks; and world culture, including the great religions as well as, to borrow John Galbraith's phrase,"the world's educational and scientific estate which is composed of world science and learning, the great universities, and the world's professions."[22]

The function of world politics, for Modelski, would be to raise, debate, and resolve world problems and to organize the contest so that the world political authority would be enabled to pursue the processing of these problems. World politics would mold world values and world public opinion by debating world problems, attempting to place certain important individuals in certain positions in the

world authority system. Human associations and organizational development would be an important precondition for a world party system. Modelski envisions six conditions enhancing the probability for the emergence of a world party system: (1) the absence of general and conventional war; (2) a strengthening of world society; (3) a rather large number of nation-states; (4) a decline in the great power share of world authority; (5) normalization of the world distribution of political preferences; and (6) a broadening of the scope of world issues.[23] Modelski regards world parties as a good means for resolving issues, and as an essential condition of world order. "World parties would be the builders, the bearers, and the defenders of the world political community." [24]

Attitudes and the Functional Approach

Fatourosi points out that, in both domestic and international politics, it is natural and tempting to reduce problems to a matter of attitude, placing the burden for social and political change on "change of heart." Attitudes will need to be supplemented by a recognition and understanding of common interests: a functional approach in which it is realized that legal forms, political procedures, institutions, economic trends, attitude changes, and technological innovations occur synchronously, through a simultaneous interlocking and interacting process. The present balance of power based on the terror of atomic

threat is too weak to serve as a basis for world cooperation. "Only in the presence of a positive intense conviction of the necessity for an international legal order, in view of the long-run benefits flowing from its existence, will it be possible for the developed countries to make the short-run sacrifices demanded of them, and for the developing states to wait for future benefits without violently rejecting or undermining the present legal order."[25]

Futuristic Views

A futuristic view is capable of pinpointing a number of problems that will have to be confronted both on the national and on the international level. Haas lists a number of such problems: the social and economic consequences of probably dramatic technological and scientific changes; fertility control; synthetic materials; organ transplants; weather forecasting; central data storage; automated language translators; social acceptance of nonaddictive drugs; automation inroads on patterns of life (teaching, data retrieval, office work, transportation, industrial process control); shorter working hours with a resulting increase in leisure time; space stations; weapons systems which include intelligence gathering, improved sensing devices for reconnaissance, chemical and biological agents, temporary incapacitating agents, computers and automated equipment on the battlefield, electromagnetic

radiation, particle beams, and lasers for weapons; and space exploration. "The social and economic problems implied defy cataloguing."[26]

Haas is not optimistic about international and interregional bargaining in the near future. "Functional analysis forces us to the conclusion that the more successful and self-contained a technical task turns out to be, the less relevance it will have for a world order dependent on generalized bargaining."[27] Nevertheless, Haas believes that a system of political blocs is going to develop, differentiated along functional rather than purely geographic lines, and that each bloc will come to represent a self-contained negotiating universe in which the interfunctional and interregional bargaining pattern cannot survive. Haas predicts that the UN of 1985 will be a reconciliation system, one with a reduced capacity for performing its collective security tasks. Ad hoc arrangements, changing patterns of interfunctional and interregional bargaining, and "flabby" majorities without the will to act may well result in a clustering of issue areas locally, and "the institutionalization of world order itself is likely to become a subordinate function." One may well wonder if such "flabby majorities," crippling action because of selfish concerns, have not already appeared in American political and national life.

The Need for Improved Ideological Formulations

The pessimism of Haas points to certain social, political, economic, and environmental "facts" which theories cannot easily circumvent. Some theorists construe the role of value systems as one which, while perhaps providing a theory with coherence and relevance, restricts its range of interests to particular classes of phenomena and systems. Easton would like social theory to possess the same generality as does the physics of motion: he would like to have a general theory of the vital processes in politics. "What is lacking is a broad way of formulating a theoretical question, one that will deliberately refrain from fixing on specific goals or even upon the vital matters of democratic systems but one that will extend its scope and address itself to the permanent and enduring problems faced by all types of political systems."[28]

While such an approach could provide a certain kind of intellectual satisfaction through its scientific universalism, it would not necessarily be suitable for reporting all kinds of facts. A rigorously "scientific" approach could easily lead to a systematic ivory tower approach, missing ideological reality by a wide margin. The Mehring model, by contrast, seeks to blend the wide range of idealism and functionalism with the methodological ideal of Easton, resulting in ten criteria or principles useful in evaluating any projected world model or discussion.

International Interdependence and Cooperation

Jacob and Atherton mention the unrealism of any approach that clings to the older nationalistic realism. The authors observe that the actions of governments become transnational as they seek to satisfy domestic needs. "What may start as a modest, seemingly local concern -- to have a market for one's product at a fair price, to have a steady job at a living wage and without discrimination, to secure a competent education, or just to be left alone in peace -- causes an ever-widening set of repercussions which quickly spill over beyond national frontiers because the actions of 'foreigners' are found to be critical in deciding whether or not these goals can be achieved."[29]

While such a state of affairs sets the stage for conflict, Jacob and Atherton indicate that it also sets the stage for international cooperation, as people and their governments "recognize the mutuality of their interests, and their inability to satisfy needs without support and collaboration by others."[30]

Illusion and Stereotyping

People tend to act in terms of expectations and of imagined results. Learning by experience often involves a lag between the imagined situation and rational and appropriate action. According to Jacob and Atherton, "The play of the essentially irrational factors of belief and prejudice, stereotyped images of others, and ideas of their

hostile or friendly intentions, and accompanying attitudes of suspicion or trust, fear or assurance, is usually even more determinative of a government's foreign policies; as are the loyalties which people have developed, especially loyalty to nation."[31]

In the final analysis, therefore, the functional approach, as in other areas of life, will depend on the degree to which experience can catch up with illusion. One advantage of the functional approach is its innate tendency to foster and educate the development of the necessary rationalism preliminary to a fuller acceptance of world order. Jacob and Atherton express an optimistic view; they do not dismiss the possibility of finding a solution to the disarmament problem on the ground that the Soviet Union rejects effective inspection and control in its orbit so that it cannot be trusted. "The control to which they have agreed would assure an extraordinary degree of penetration into the military posture behind the Iron Curtain under conditions that would not divest the West of its 'shield' and certainly not of its 'sword.'"[32] The stereotypes of the Russians encouraged by Truman and by Churchill must be supplemented by views conducive to negotiation with others, based on anticipations of genuine cooperation and of positive results.

The Poor and Underdeveloped Nations -- A Challenge

Somewhere between two thirds and three quarters of the world is underdeveloped. Economic plans stumble over the obstacles of population growth, unyielding tradition, inefficient public and private administration, and lack of resources. The poor nations are far from reaching the goal of shaking off their poverty. Yet, it does not necessarily follow that mere input, whether of capital or skills, or whether from the outside or the inside, will automatically lead to economic development. "For one thing, the problem of how to infuse such resources into the lifestream of these countries so that they become self-propelling remains largely unresolved."[33] Many of these nations are unable to absorb new resources because their economies are not successfully integrated, either internally or in relation to other countries. How to help them remains a problem as complex as the structure of world government itself.

It would be unrealistic to mouth the theology of human rights, yet continue to deprive nations of their economic rights through colonialism or other subtle forms of domination. Ultimately, the world may move toward world order and peace simply because it is in its best self-interest to do so. On the other hand, such mechanical functionalism is not likely to be effective unless the movement is based on the explicit recognition of the variables included in the Mehring model of world order.

Such a model provides a better view of the terrain to be covered, a potential guide without which there will be continued random stumbling or reliance on a dimly understood naturalism, preventing the goal of world order from being realized.

Even the most polished diplomacy, realism, or functionalism cannot avoid the root cause of most dire social and economic circumstances, a cause that is ideological rather than environmental. While apologists for colonialism and imperialism have used economic arguments to justify exploitation, their explanations tend to rationalize bad motives. Perhaps Gibbon went too far in the direction of morality in citing "evil in the hearts of men" as the cause of the decline and fall of the Roman Empire. Yet, experience points to countless instances of social evil growing out of selfish interest and conscious intent. Watergate was not so much the consequence of a careless President Nixon as it was a nation facing the consequences of its own choice willingly to espouse Nixon's political and social philosophy. Bad philosophical seed has a way of surfacing by sprouting in strange places and in strange ways. The eventual elimination of poverty will depend more on changing the hearts and minds of men than on a brilliantly conceived social plan or economic theory. Unlike most of the would-be reformers of the early nineteenth century, William Lloyd Garrison labeled slavery a

sin, and it was more on this basis that slavery was subsequently abolished than on the basis of some assumed naturalistic interpretation or economic "law" holding that it would have withered away anyway, without a struggle.

Whatever the price of reform, it most certainly involves a clash of values. However, it need not involve a clash of arms on the battlefield. Constitutions and administrative models have a way of satisfying social conscience as well as social need. Old social forms are generally unsuitable for an evolving social consciousness and ethical awareness. Ideals will be realized more effectively if social form and inspired ideal are congruent. That such congruence can be achieved better through appropriate models is evident. At the international level of social organization, the Mehring model has been offered as one such model.

By way of providing a summative perspective on the entire present study, it had two outcomes. The major outcome was the Mehring model. It reflected the major concepts and variables derived from a literature review and set forth ten principles underlying the conditions, processes, and goals essential to any planned evolution of world government. This model was shown to be inspired by and mirrored in both the IAEA experience and its constitutional and administrative structure.

The secondary outcome of the study was a

comprehensive coverage of numerous major facets of the IAEA. Presenting this coverage required synthesizing numerous sources in which various pieces of the total picture were found. Each individual source covered some one narrow aspect of the IAEA in depth, but failed, when considered by itself, to provide anything approaching a total picture of the Agency. Accordingly, the study presented a detailed, overall analysis of the IAEA as an institution in a fashion not found in any other single work. As such, the study supplies researchers into IAEA concerns with a single source of information, eliminating the time-consuming task of locating and examining dozens of widely scattered books, articles, and journals.

Footnotes

1. John W. Spanier, World Politics in an Age of Revolution (New York: Frederick A. Praeger, 1968), p. 196.
2. Ibid., p. 249.
3. Ibid., p. 255.
4. Ibid., p. 287.
5. Richard N. Gardner, In Pursuit of World Order (New York: Frederick A. Praeger, 1964), p. 140.
6. Ibid., p. 173.
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8. Ibid., p. 210.
9. Hans Morgenthau, Politics Among Nations: The Struggle for Power and Peace (New York: Alfred A. Knopf, 1967), p. 548.
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11. Ibid., p. 549.
12. Winston Churchill, Parliamentary Debates (Hansard), House of Commons, January 23, 1948, Vol. 446, No. 28, p. 562.
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15. Ibid., p. 8.
16. H. de Blij, Systematic Political Geography, (New York: John Wiley and Sons, 1967), p. 567.
17. Ibid., pp. 567-568.
18. Ibid., p. 592.

19. M. S. McDougal, H. D. Lasswell, and W. M. Reissman, "The World Constitutive Process of Authoritative Decision," in The Future of the International Legal Order, eds. Cyril E. Black and Richard A. Falk (Princeton, N.J.: Princeton University Press, 1969), p. 126.

20. Ibid.

21. George Modelski, "World Parties and World Order," in The Future of the International Legal Order, p. 183.

22. Ibid., p. 190.

23. Ibid., p. 219.

24. Ibid.

25. A. A. Fatourosi, "Participation of the 'New' States in the International Legal Order of the Future," in The Future of the International Legal Order, p. 371.

26. Ernst Haas, "Collective Security and the Future International System," in The Future of the International Legal Order, p. 297.

27. Ibid., p. 311.

28. David Easton, A System Analysis of Political Life (Chicago: University of Chicago Press, 1965), p. 14.

29. Philip E. Jacob and Alexine Atherton, The Dynamics of International Organization: The Making of World Order (Homewood, Ill.: The Dorsey Press, 1965), p. 7.

30. Ibid.

31. Ibid., p. 8.

32. Ibid., p. 267.

33. Ibid., p. 439.

APPENDIX A

RESOLUTION 255 OF THE SECURITY COUNCIL (1968)[1]

Adopted on 19 June 1968.

THE SECURITY COUNCIL,

Noting with appreciation the desire of a large number of States to subscribe to the Treaty on the Non-Proliferation of Nuclear Weapons, and thereby to undertake not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices,

Taking into consideration the concern of certain of these States that, in conjunction with their adherence to the Treaty on the Non-Proliferation of Nuclear Weapons, appropriate measures be undertaken to safeguard their security,

Bearing in mind that any aggression accompanied by the use of nuclear weapons would endanger the peace and security of all States,

1. Recognizes that aggression with nuclear weapons or the threat of such aggression against a non-nuclear weapon State would create a situation in which the Security Council, and above all its nuclear weapon State permanent members, would have to act immediately in accordance with their obligations under the United Nations Charter;

2. Welcomes the intention expressed by certain States that they will provide or support immediate assistance, in accordance with the Charter, to any non-nuclear weapon State Party to the Treaty on the Non-Proliferation of Nuclear Weapons that is a victim of an act or an object of a threat

of aggression in which nuclear weapons are used;

3. Reaffirms in particular the inherent right, recognized under Article 51 of the Charter, of individual and collective self-defence if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security.

Footnotes

1. International Atomic Energy Agency, A Short History of Non-Proliferation (Vienna, February 1976).

APPENDIX B

TEXT OF THE TREATY ON THE NON-PROLIFERATION OF NUCLEAR WEAPONS[1]

The States concluding this Treaty, hereinafter referred to as the "Parties to the Treaty,"

Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples,

Believing that the proliferation of nuclear weapons would seriously enhance the danger of nuclear war,

In conformity with resolutions of the United Nations General Assembly calling for the conclusion of an agreement on the prevention of wider dissemination of nuclear weapons,

Undertaking to cooperate in facilitating the application of International Atomic Energy Agency safeguards on peaceful nuclear activities,

Expressing their support for research, development and other efforts to further the application, within the framework of the International Atomic Energy Agency safeguards system, of the principle of safeguarding effectively the flow of source and special fissionable materials by use of instruments and other techniques at certain strategic points,

Affirming the principle that the benefits of peaceful applications of nuclear technology, including any technological by-products which may be derived by nuclear weapon States from the development of nuclear explosive devices, should be available for peaceful purposes to all Parties to the Treaty, whether nuclear weapon or non-nuclear weapon States,

Convinced that, in furtherance of this principle, all

Parties to the Treaty are entitled to participate in the fullest possible exchange of scientific information for, and to contribute alone or in cooperation with other States to, the further development of the applications of atomic energy for peaceful purposes,

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament,

Urging the cooperation of all States in the attainment of this objective,

Recalling the determination expressed by the Parties to the 1963 Treaty banning nuclear weapon tests in the atmosphere, in outer space and under water in its Preamble to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time and to continue negotiations to this end,

Desiring to further the easing of international tension and the strengthening of trust between States in order to facilitate the cessation of the manufacture of nuclear weapons, the liquidation of all their existing stockpiles, and the elimination from national arsenals of nuclear weapons and the means of their delivery pursuant to a treaty on general and complete disarmament under strict and effective international control,

Recalling that, in accordance with the Charter of the United Nations, States must refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations, and that the establishment and maintenance of international peace and security are to be promoted with the least diversion for armaments of the world's human and economic resources,

Have agreed as follows:

ARTICLE I

Each nuclear weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly; and not in any way to assist, encourage, or induce any non-nuclear weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices.

conclude agreements with the International Atomic Energy Agency to meet the requirements of this article either individually or together with other States in accordance with the Statute of the International Atomic Energy Agency. Negotiation of such agreements shall commence within 180 days from the original entry into force of the Treaty. For States depositing their instruments of ratification or accession after the 180-day period, negotiation of such agreements shall commence not later than the date of such deposit. Such agreements shall enter into force not later than eighteen months after the date of initiation of negotiations.

ARTICLE IV

1. Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with articles I and II of this Treaty.

2. All the Parties to the Treaty undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy. Parties to the Treaty in a position to do so shall also cooperate in contributing alone or together with other States or international organizations to the further development of the applications of nuclear energy for peaceful purposes, especially in the territories of non-nuclear weapon States Party to the Treaty, with due consideration for the needs of the developing areas of the world.

ARTICLE V

Each Party to the Treaty undertakes to take appropriate measures to ensure that, in accordance with this Treaty, under appropriate international observation and through appropriate international procedures, potential benefits from any peaceful applications of nuclear explosions will be made available to non-nuclear weapon States Party to the Treaty on a non-discriminatory basis and that the charge to such Parties for the explosive devices used will be as low as possible and exclude any charge for research and development. Non-nuclear weapon States Party to the Treaty shall be able to obtain such benefits, pursuant to a special international agreement or agreements, through an appropriate international body with adequate representation of non-nuclear weapon States. Negotiations on this subject shall commence as soon as possible after the Treaty enters into force. Non-nuclear weapon States party to the Treaty

ARTICLE II

Each non-nuclear weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices.

ARTICLE III

1. Each non-nuclear weapon State Party to the Treaty undertakes to accept safeguards, as set forth in an agreement to be negotiated and concluded with the International Atomic Energy Agency in accordance with the Statute of the International Atomic Energy Agency and the Agency's safeguards system, for the exclusive purpose of verification of the fulfillment of its obligations assumed under this Treaty with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices. Procedures for the safeguards required by this article shall be followed with respect to source or special fissionable material whether it is being produced, processed or used in any principal nuclear facility or is outside any such facility. The safeguards required by this article shall be applied on all source or special fissionable material in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere.

2. Each State Party to the Treaty undertakes not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear weapon state for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this article.

3. The safeguards required by this article shall be implemented in a manner designed to comply with article IV of this Treaty, and to avoid hampering the economic or technological development of the Parties or international cooperation in the field of peaceful nuclear activities, including the international exchange of nuclear material and equipment for the processing, use or production of nuclear material for peaceful purposes in accordance with the provisions of this article and the principle of safeguarding set forth in the Preamble of the Treaty.

4. Non-nuclear weapon States Party to the Treaty shall

so desiring may also obtain such benefits pursuant to bilateral agreements.

ARTICLE VI

Each of the parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.

ARTICLE VII

Nothing in this Treaty affects the right of any group of States to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories.

ARTICLE VIII

1. Any Party to the Treaty may propose amendments to this Treaty. The text of any proposed amendment shall be submitted to the Depositary Governments which shall circulate it to all parties to the Treaty. Thereupon, if requested to do so by one third or more of the Parties to the Treaty, the Depositary Governments shall convene a conference, to which they shall invite all the Parties to the Treaty, to consider such an amendment.

2. Any amendment to this Treaty must be approved by a majority of the votes of all the Parties to the Treaty, including the votes of all nuclear weapon States Party to the Treaty and all other Parties which, on the date the amendment is circulated, are members of the Board of Governors of the International Atomic Energy Agency. The amendment shall enter into force for each Party that deposits its instrument of ratification of the amendment upon the deposit of such instruments of ratification by a majority of all the Parties, including the instruments of ratification of all nuclear weapon States Party to the Treaty and all other Parties which, on the date the amendment is circulated, are members of the Board of Governors of the International Atomic Energy Agency. Thereafter, it shall enter into force for any other Party upon the deposit of its instrument of ratification of the amendment.

3. Five years after the entry into force of this Treaty, a conference of parties to the Treaty shall be held in Geneva, Switzerland, in order to review the operation of this Treaty with a view to assuring that the purposes of the Preamble

and the provisions of the Treaty are being realized. At intervals of five years thereafter, a majority of the Parties to the Treaty may obtain, by submitting a proposal to this effect to the Depositary Governments, the convening of further conferences with the same objective of reviewing the operation of the Treaty.

ARTICLE IX

1. This Treaty shall be open to all States for signature. Any State which does not sign the Treaty before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland and the United States of America, which are hereby designated the Depositary Governments.

3. This Treaty shall enter into force after its ratification by the States, the Governments of which are designated Depositaries of the Treaty, and forty other States signatory to this Treaty and the deposit of their instruments of ratification. For the purposes of this Treaty, a nuclear weapon State is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or of accession, the date of the entry into force of this Treaty, and the date of receipt of any requests for convening a conference or other notices.

6. This Treaty shall be registered by the Depositary Governments pursuant to article 102 of the Charter of the United Nations.

ARTICLE X

1. Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of

this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.

2. Twenty-five years after the entry into force of the Treaty, a conference shall be convened to decide whether the Treaty shall continue in force indefinitely, or shall be extended for an additional fixed period or periods. This decision shall be taken by a majority of the Parties to the Treaty.

ARTICLE XI

This Treaty, the Chinese, English, French, Russian and Spanish texts of which are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of the Treaty shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.

In witness whereof the undersigned, duly authorized, have signed this Treaty.

Signed in London, Moscow and Washington on 1 July 1968.
Entered into force on 5 March 1970.

Footnotes

1. International Atomic Energy Agency, A Short History of Non-Proliferation (Vienna, February 1976).

APPENDIX C

THE FIRST REVIEW CONFERENCE: MAY 1975[1]

The first Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons concluded its session in Geneva on 30 May 1975 by adopting a Final Declaration stating that all parties had faithfully observed the Treaty provisions prohibiting transfer of nuclear weapons and their technology from nuclear weapon to non-nuclear weapon States.

Substantive items on the agenda included a review of the operation of the Treaty and its role in promoting the non-proliferation of nuclear weapons and nuclear disarmament, and in strengthening international peace and security. The Conference dealt with the implementation of the clauses on peaceful applications of nuclear energy and considered the action taken in regard to Security Council resolution 255 (1968) on guarantees for the security of non-nuclear weapon States Parties to the Treaty.

Since the Treaty embodied a balance of mutual responsibilities and obligations of the nuclear and non-nuclear weapon States, the Conference reviewed how those obligations had been implemented with a view to strengthening the role of the Treaty in the promotion of non-proliferation, nuclear disarmament and international peace and security.

In its Final Declaration, adopted by consensus, the Conference

-- expressed the view that the conclusion of a treaty banning all nuclear weapon tests would be one of the most important measures to halt the nuclear arms race;

-- emphasized the need to discontinue all nuclear weapon tests for all time. The USSR and the USA -- signatories of the Treaty on the Limitation of Underground Nuclear Weapon Tests -- were called upon to limit the number of

their underground nuclear weapon tests to a minimum, to aid negotiations for the conclusion of a treaty banning all nuclear weapon test explosions for all time, and as parties to the negotiations on the limitation of strategic arms (SALT), to endeavour to conclude at the earliest possible date the new agreement outlined by their leaders in November 1974;

-- expressed its strong support for IAEA safeguards aimed at preventing the diversion of nuclear energy from peaceful uses to nuclear weapons or other explosive devices; it urged that common export requirements relating to safeguards be strengthened;

-- urged that further concrete recommendations for the physical protection of nuclear material in use, storage and transit be elaborated. It reaffirmed the obligation of the parties to the Treaty to ensure that potential benefits from any peaceful applications of nuclear explosions are made available to non-nuclear weapon parties. It was considered imperative that access to potential benefits of nuclear explosions for peaceful purposes would not lead to any proliferation of nuclear explosive capability;

-- recognized the IAEA as the appropriate international body referred to in Article V of the Treaty through which potential benefits from PNE could be made available to any NNWS. The Conference also urged the IAEA to set up appropriate machinery within which intergovernmental discussions could take place.

The Conference also considered that the establishment of internationally recognized nuclear weapon-free zones with the agreement of the States directly concerned represented an effective means of curbing the spread of nuclear weapons. The declaration called for a second conference in 1980 to review the operation of the Treaty.

Footnotes

1. International Atomic Energy Agency, A Short History of Non-Proliferation (Vienna, February 1976).

APPENDIX D

STATES THAT HAVE RATIFIED OR ACCEDED TO THE NPT[1,2]

Nuclear Weapon States[3]

Union of Soviet Socialist Republics
United Kingdom
United States of America

Non-Nuclear Weapon States

Afghanistan
Australia
Austria
Bahamas
Belgium
Bolivia
Botswana
Bulgaria
Burundi
Cambodia
Canada
Central African Republic
Chad
China, Republic of[4]
Costa Rica
Cyprus
Czechoslovakia
Dahomey
Denmark
Dominican Republic
Ecuador
El Salvador
Ethiopia
Fiji
Finland
Gabon
Gambia
German Democratic Republic
Germany, Federal Republic of
Ghana
Greece
Grenada
Guatemala
Haiti
Holy See
Honduras
Hungary
Iceland
Iran
Iraq
Ireland
Italy
Ivory Coast
Jamaica
Jordan
Kenya
Korea, Republic of
Laos
Lebanon
Lesotho
Liberia
Libyan Arab Republic

Luxembourg
Madagascar
Malaysia
Maldives
Mali
Malta
Mauritius
Mexico
Mongolia
Morocco
Nepal
Netherlands
New Zealand
Nicaragua
Nigeria
Norway
Paraguay
Peru
Philippines
Poland
Republic of South Vietnam
Romania
Rwanda
San Marino
Senegal
Sierra Leone
Somalia
Sudan
Swaziland
Sweden
Syrian Arab Republic
Thailand
Togo
Tonga
Tunisia
United Republic of Cameroon
Upper Volta
Uruguay
Venezuela
Western Samoa
Yugoslavia
Zaire

STATES WHICH ARE NOT PARTIES TO THE NPT[1,2]

Nuclear Weapon States[3]

China
France

Non-Nuclear Weapon States

Albania
Algeria
Argentina
Bahrain
Bangladesh
Bhutan
Brazil
Burma
Cape Verde
Chile
Comoros
Congo
Cuba
Democratic People's Republic of Korea
Democratic Republic of Vietnam
Equatorial Guinea
Guinea
Guinea-Bissau
Guyana
India
Israel
Liechtenstein
Malawi
Mauritania
Monaco
Mozambique
Niger
Oman
Pakistan
Papua New Guinea
Portugal
Qatar
Sao Tome and Principe
Saudi Arabia
South Africa
Spain
Uganda
United Arab Emirates
United Republic of Tanzania
Zambia

STATES THAT HAVE SIGNED THE NPT BUT HAVE NOT RATIFIED[1,2]

Barbados
Colombia
Democratic Yemen
Egypt
Indonesia
Japan
Kuwait
Panama
Singapore
Sri Lanka
Switzerland
Trinidad and Tobago
Turkey
Yemen

Footnotes

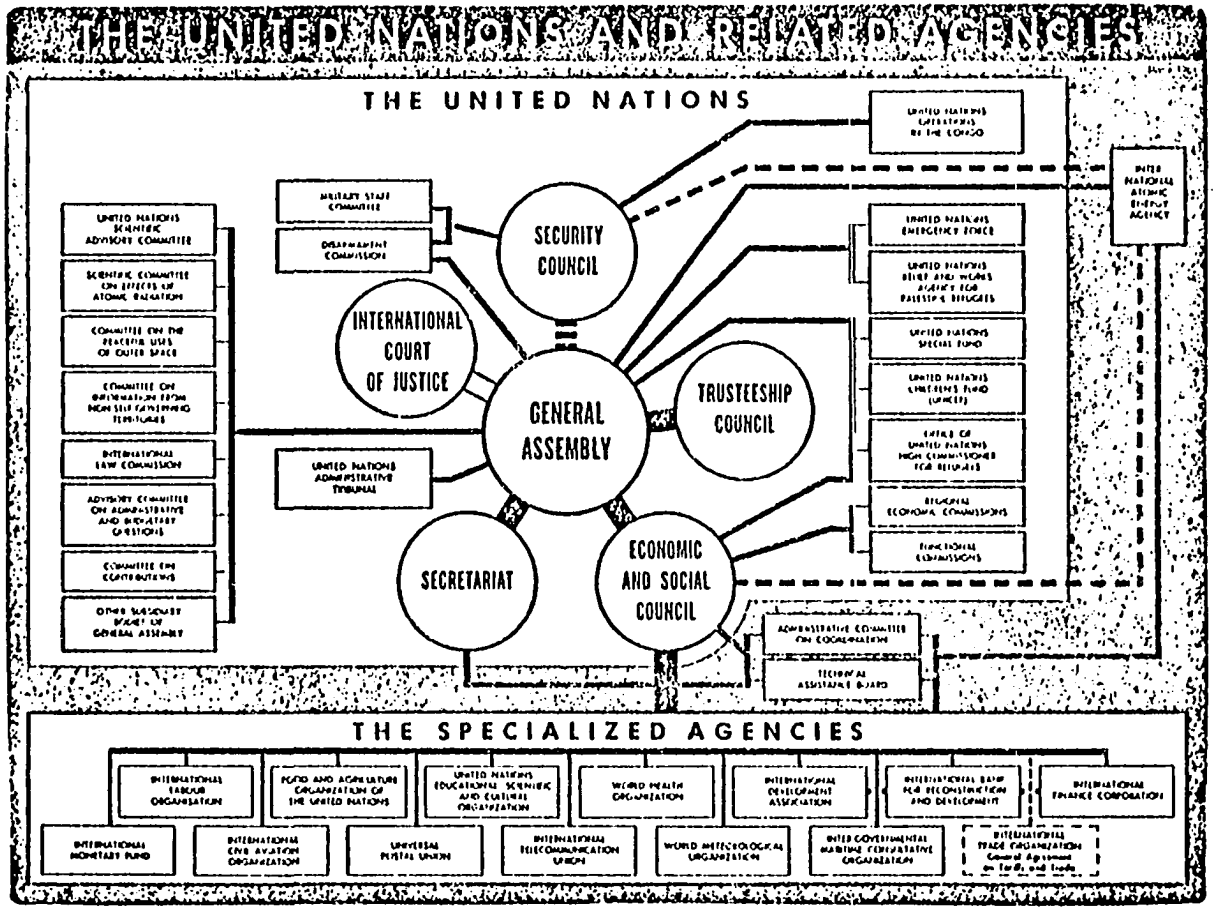
1. International Atomic Energy Agency, A Short History of Non-Proliferation (Vienna, February 1976).

2. As of December 1975.

3. For purposes of the NPT, a nuclear-weapon State was defined as one which had manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967.

4. An entry in this column does not imply the expression of any opinion whatsoever on the part of the Secretariat concerning the legal status of any country or territory or of its authorities, or concerning the delimitation of its frontiers.

APPENDIX E



Taken from UNESCO Youth Institute, Energy and Skills for Human Progress (Dobbs Ferry, N.Y.: Oceana Publications, Inc., 1963), p. 103.

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ABSTRACT OF A DISSERTATION

IN QUEST OF A NEW WORLD ORDER: A WORLD ORGANIZATION MODELED AFTER THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

The Problem

The general problem of the study was to find or develop an appropriate model for world government, one maintaining a balance between the world order and the various national governments. Underpinning the problem were the assumptions that the world has, historically, moved in the direction of ever larger units of government and of international cooperation, that nationalism and patriotism have always represented a major obstacle to this movement, and that world government is necessary to solve the world's major problems.

The International Atomic Energy Agency (IAEA) experience, its formal Statute, and its staff were considered as the basis for projecting a model of world government. An autonomous body related to the United Nations, the successes which the IAEA has enjoyed were considered the result of the sound processes and principles on which it is based. It was believed that an international model of government reflecting the IAEA experience could provide the stimulus for a cooperative effort, for single-minded action in the international arena.

Developing a successful such model was recognized as depending on a number of questions and issues involving world government and the IAEA. How has the IAEA succeeded in resolving delicate political problems? How could the same techniques be applied to resolve problems in a new world order? In view of the fact that nations differ in their power, needs, interests, and resources, how is world cooperation to be achieved, especially within a framework or institution of limited power? What are some of the basic realities underlying all idealistic efforts in the direction of world government? What is the importance of diplomacy in power negotiations? What is the role and importance of

international law? How can the IAEA, in the context of these and other issues, serve as a model for world government?

Methodology

Based on the author's experience and on an in-depth review of relevant literature, the key concepts and variables underlying a model of world order were isolated. Three major concepts identified were macropolitics, functionalism, and systems thinking. The essential variables within this conceptual framework were found to be nationalism, regionalism, sovereignty, political power, balance of power, ideology (morality, ethics, and human rights as well as the "welfare" variables involving the social, economic, and political order), international law, world peace, disarmament, and diplomacy. The study also made a thorough analysis of the IAEA experience and of its constitutional and administrative structure.

Results: The Model

The major result of the study was a model of world order reflecting the basic concepts, variables, and IAEA experience derived from the review and analysis of pertinent literature. It was found that, while the particular IAEA constitutional and administrative structure itself could not be projected as a model for world order, this structure, combined with the IAEA experience, involved vital processes, structures, and goals essential to world order. These were translated into ten principles summarized in the model:

1. World Ideology.
2. International Functionalism.
3. International Professionalism and Experience.
4. International Autonomy.
5. Geopolitical Basis of Membership.
6. International Intervention.
7. World Peace.
8. Maximal International Connections.
9. International Realism.

10. Regionalism.

Each of these ten principles was defined in detail and offered as part of a list of criteria to be used in assessing any plan for world order. Unless a plan for world government could be shown to reflect the substance of the ten principles, it was concluded that the crucial conditions, processes, and goals of world order could not be realized.

A secondary result of the study was comprehensive coverage of numerous major facets of the IAEA. As such, the study will provide future researchers concerned with the IAEA with a single source of information which eliminates the time-consuming task of locating and examining dozens of widely scattered books, articles, and journals.