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CORE DOCUMENTS

HUMAN RIGHTS AND SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENTS

The balance which should be established between scientific
and technological progress and the intellectual, spiritual,
cultural and moral advancement of humanity

DIVISION DE DOCUMENTS
SECTION DES PRESENCES
CORE DOCUMENTS
A RENDRE AU BUREAU E/1976

Report of the Secretary-General

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INTRODUCTION

1. The present report has been prepared in accordance with paragraph 1 (d) of General Assembly resolution 2450 (XXIII) of 18 December 1968, which invited the Secretary-General to undertake a study of "the balance which should be established between scientific and technological progress and the intellectual, spiritual, cultural and moral advancement of humanity". The report may be reviewed, subsequent to the examination given to it by the Commission on Human Rights.
2. On 27 March 1975, the Secretary-General enquired whether Governments wished to contribute views or studies to the writing of the report. Appropriate enquiries were also sent, on 2 April 1975, to the International Labour Organisation, the United Nations Educational, Scientific and Cultural Organization, the World Health Organization and the Food and Agriculture Organization of the United Nations and, on 15 April 1975, to certain non-governmental organizations. As of 31 December 1975, substantive replies had been received from the Governments of the Federal Republic of Germany, Israel, Sudan, Thailand and the Union of Soviet Socialist Republics, from the United Nations Educational, Scientific and Cultural Organization and the Food and Agriculture Organization of the United Nations, and from the Bahá'i International Community and the International Council of Scientific Unions.
3. Written comments on the topic were invited, and received, from the following (referred to in this report as "expert contributors"): Dr. Eric Burhop, Professor of Physics, University of London, President of the World Federation of Scientific Workers; Dr. Jacques Errera, Professor of Chemistry and Physics, Free University of Brussels, and Dr. Lesjek Kasprzyk, Professor at the Polish Academy of Sciences, Warsaw.
4. In Addition, a meeting of a group of other eminent international experts was held in Geneva, on 15-19 September 1975, to discuss the topic. These were: the late Mr. René Maheu, former Director-General of UNESCO (chairman); Professor Kazuhiko Astumi, Director, Institute of Medical Electronics, Faculty of Medicine, University of Tokyo; Dr. H. Bentley Glass, Professor of Biology, State University of New York at Stony Brook; Mr. Hector Gros Espiell, Secretary-General of OPANAL (Organizacion para la Proscripcion de las Armas Nucleares en la America Latina, Tratado de Tlatelolco); Academician Peter Kapitsa, Member of the Presidium of the Academy of Science, Director of the Institute for Physical Problems, USSR; and Dr. Thomas A. Lambo, Deputy Director-General of WHO. At the end of its deliberations, the group of experts (hereinafter referred to as "the Group") adopted a statement. Although the meeting of the Group was convened by the United Nations Secretariat, the latter does not necessarily endorse every aspect of the statement. Parts of this statement are referred to at various appropriate points in the present report. In full it reads as follows:
 1. The scientific and technological progress of mankind is an essential part of human intellectual, spiritual, cultural and moral advancement. What is necessary is to see the interconnexion and interdependence between them, that is to say the way in which each influences the other. Certain specific scientific and technological advances such as those listed in paragraph 5 below do pose risks to individual human rights, the welfare of society or the global condition of mankind.
 2. Whereas scientific and technological progress is a motive force in human advancement, the choice of values, objectives and goals - in other words, the direction of advancement sought by a particular society at a particular time -

is not inherent in the nature of science and technology. It derives largely from the emotional, cultural and ethical aspects of human life. A true integration of scientific and technological progress in the life of a people, therefore, depends on the completeness of its mutual relationship with other intellectual, spiritual, cultural and ethical standards and goals.

3. A thorough revision of education at all levels is required to bring about a sufficient harmony of science and technology with other human activities. Science and technology must be taught in the context of the ascent of Man, not primarily as potential contributors to the disruption of society or the depersonalization of individual lives. A proper understanding of science and its impact on society is essential for dealing adequately with the evolving problems of civilization.

4. Not every change or development that science and technology make feasible needs to become an actuality. Governments and societies must determine by appropriate mechanisms for technological assessment - including the assessment of possible side effects and long-range effects - whether the time is right for particular innovations and whether their advantages outweigh for the society the discernible disadvantages. International machinery should be entrusted with such a technological assessment for mankind as a whole. It is a basic human right to have a voice in such decisions. Decisions in such matters must be made on the basis of the considered opinion of bodies of experts and laymen who represent the interests of all the people as well as of future generations.

5. With these ideas in mind, and taking into account the necessity for keeping under constant review the promotion and protection of human rights in the light of rapid scientific and technological developments, the Group recommends that consideration be given to the possibility of drafting a Declaration on human rights and scientific and technological developments. Among the topics which would be covered by the Declaration, the Group recommends especially the following:

Population planning (quantitative and qualitative) in relation to the right to found a family; protection against the hazards of the use of atomic energy; human experimentation; implications of new biological and medical discoveries (e.g. (a) tissue and organ transplantation and the use of artificial organs, (b) genetic manipulation of microbes, and (c) potential modifications of human genome); modification of mental processes by medical means; the social and ethical implications of the extension of life and of new definitions of and attitudes to death, and social and ethical choices in relation to equality in the provision of health protection and medical care.

6. It is recommended that a better definition be given of the duties of the individual to the community and of the rights of future generations. For example, it seems to us that the crisis in growth of the world's population must lead to some constraint on the individual right to reproduce, and that the right of the child to be born physically and mentally sound takes precedence over the rights of parents to reproduce."

I. THE NATURE OF THE PROBLEM

5. Much consideration was given, by the various authorities invited to contribute to the present report, to the way in which paragraph 1 (d) of General Assembly resolution 2450 (XXIII) was to be interpreted.

6. As has been seen in paragraph 4 above, paragraphs 1-2 of the Statement adopted on 19 September 1975 by the Group expressed the view that the scientific and technological progress of mankind is an essential part of human intellectual, spiritual, cultural and moral advancement. What was necessary was to see the interconnexion and interdependence between them, that is to say the way in which each influences the other. Whereas scientific and technological progress was a motive force in human advancement, the choice of values, objectives and goals - in other words, the direction of advancement sought by a particular society at a particular time - was not inherent in the nature of science and technology. It derived largely from the emotional, cultural and ethical aspects of human life. A true integration of scientific and technological progress in the life of a people, therefore, depended on the completeness of its mutual relationship with other intellectual, spiritual, cultural and ethical standards and goals.

7. One member of the Group had wondered whether the General Assembly had been well advised in using the word "balance" in paragraph 1 (d) of resolution 2450 (XXIII). Surely scientific progress had been the result, in a broad sense, of intellectual advancement? "I cannot approve", said another participant, "a concept of the modern world, of modern man, where science is seen in opposition to intellect. What does this phrase really mean?" "This term balance", a member of the Group said, "between science and technological progress and the intellectual, spiritual, cultural and moral advancement of humanity is not ... a suitable term. It implies that you set one thing off against the other, and that you weigh them in a balance. I would prefer to see such a word as interconnexion - an interdependence which can be established". There should be much more discussion between scientists and technologists of the intellectual, spiritual, moral and cultural aspects of what they are doing. And there should be much more attention on the part of leaders in other disciplines to scientific and technological developments. The past 15 years had seen great improvements in this direction; in part it had grown out of the deepening concern in most countries about the preservation and the fertility of the environment. A member of the Group pointed out that science is itself a certain type of culture and therefore the issue is not a comparison between something that is not cultural and a culture which has no access to science; it was a question of the integration of a particular kind of culture with the rest of the overall cultural context. The problem was how to strengthen the non-scientific part of culture and to improve the relationship between this non-scientific part and science as such.

8. The same opinion appears in the written statement of one of the expert contributors to the present report. He wrote that: "The formulation of the problem of the human implications of science and technology in the manner suggested by paragraph 1 (d) of General Assembly resolution 2450 suggests a conflict between 'scientific and technological' values on the one hand and 'cultural and moral' values on the other". This appeared to him "a profoundly mistaken point of view", and he endorsed the opening sentences of the statement made by the Group. He concluded that: "The dilemma is not well formulated in the title of this study. Science and technology are part of our culture. It is not a question of finding the right balance between two conflicting aspects of human endeavour, but of finding the optimum conditions for one to complement the other. Science and technology are able to provide the material basis on which a full life can be built."

9. The same contributor writes that "the extreme disproportion between technological abilities of man and his moral and spiritual indolence may be detrimental if not altogether fatal to humanity". This illustrates the fact that moral and spiritual attitudes affect the application of science and technology.

10. The Government of the Federal Republic of Germany also stresses the concept of "relationship":

"The Federal Government attaches great importance to a balanced relationship between scientific and technological progress on the one hand and the intellectual, spiritual, cultural and moral advancement of humanity on the other. It is convinced that scientific and technological progress can only enhance the general good of mankind if accompanied by corresponding advances in the intellectual, spiritual, cultural and moral fields. The human rights and fundamental freedoms proclaimed in the 1948 Universal Declaration of Human Rights set certain limits to the influence of scientific and technological progress on the individual, thus making for a harmony between scientific-technological and intellectual moral development (cf. paragraph 5 of the preamble to the Universal Declaration of Human Rights of 10 December 1948)." 1/

11. The Director-General of UNESCO wrote in 1973:

"Far from admitting that scientific progress may be incompatible with cultural development, UNESCO - and in this lies the profound originality of its purpose - unites them both indissolubly in the same quest, the same movement of human fulfilment, supported by the formative activity of education and communication. In fact the essence of science - which I take to be the scientific spirit and its distinctive manner of proceeding - is a cultural matter in the strictest sense of the term: by which I mean the free adherence to certain values which govern a choice among the manifold possible attitudes of the mind with regard to nature and itself, with regard to oneself and to others. 2/

12. At its thirteenth session, 1-10 April 1970, the Advisory Committee on the Application of Science and Technology to Development expressed the hope that the second preambular paragraph of General Assembly resolution 2450 (XXIII) 3/ would not be read so as to imply that the recent scientific discoveries and technological advances did, on balance, endanger the rights and freedom of individuals and

1/ Information furnished by the Government of the Federal Republic of Germany on 3 July 1975.

2/ A/9227, Part A, paragraph 5.

3/ This paragraph reads:

"The General Assembly,

...

"Sharing the concern ... that recent scientific discoveries and technological advances, although they open up vast prospects for economic, social and cultural progress, may nevertheless endanger the rights and freedoms of individuals and peoples and consequently call for constant attention."

peoples. Only some of them did, whereas the majority were geared to human benefit. ^{4/} In order to avoid any implication that there is a necessary conflict between scientific and technological progress and the intellectual, spiritual, cultural and moral advancement of humanity, the Secretary-General, as was envisaged in his earliest report prepared as part of the study of human rights and scientific and technological developments, ^{5/} has, in the later reports which form parts of the study, taken into account both the threats and dangers to human rights arising out of recent scientific and technological developments and the benefits of such developments, "so that their advantages and disadvantages might be assessed in the light of the intellectual, spiritual, cultural and moral advancement of mankind". ^{6/}

13. The relative nature of the answer to be given by the question under examination was mentioned by several members of the Group and by other expert contributors. It was maintained in the discussions of the Group that the relationship between science and technology and the various aspects of the advancement of humanity was a fluid and changing one, and that therefore that it was not possible to pin down for all time and all places what this relationship should be. One member of the Group pointed out that, whereas in the developed countries there was a fear that advances in science and technology might cause infringements of human rights, in the developing countries those advances were seen to promote economic and social development, without which freedom was impossible to achieve. One expert contributor writes: "In our efforts to restore or create a state of balance between [the development of science and technology on the one hand and the progress of culture and morality on the other] we remain conscious of the fact that the character of such a balance can only be dynamic, that it cannot be thought of in terms of a static state since that would be contrary to the constantly changing conditions of human life. The character of the balance is also relative since we shall never be able to achieve absolute harmony between the two spheres in question. We can, however, constantly diminish the growing disproportion by means of a more rapid development of the appropriate fields of culture and morality and protect human rights through State policy against the negative effects of industrialization." Another expert contributor states that "there is no general answer to the problem posed. Each specific problem involving the application of a new technology, or even the application of an old technology under new conditions must be examined anew." A third writes:

"In this study we shall consider whether science and technology have exercised a favourable or an unfavourable influence on the intellectual, spiritual, cultural and moral advancement of mankind.

This influence can differ according to the kind of culture, religion and customs surrounding a man's life. The impact can therefore vary from continent to continent, from country to country and even from region to region.

...

There is therefore no natural balance between scientific and technological progress and the intellectual, spiritual, cultural and moral advancement of humanity.

^{4/} E/AC.52/L.95, para. 61.

^{5/} E/CN.4/1028, para. 9, E/CN.4/1028/Add.3, para. 325 and E/CN.4/1028/Add.4, paras. 339 and 340.

^{6/} E/CN.4/1028, para. 9.

It seems indisputable that progress made in the fields of science and technology may have contributed to the advancement of mankind at all levels. But there is also no question that mankind has known periods in which, at the same time as it experienced scientific and technological progress, it moved backwards in the moral and spiritual spheres. Lastly, it must be added that spiritual, moral and cultural heights have been and are being attained in a very limited scientific and technical context, in other words when science and technology are not exercising a preponderant influence."

14. Paragraph 1 of General Assembly resolution 3026B (XXVII) of 18 December 1972 "recognizes that the scope of the problem mentioned in paragraph 1 (d) of General Assembly resolution 2450 (XXIII) and Commission on Human Rights resolution 10 (XXVII) is of such a comprehensive nature as to cover every aspect of this question" of human rights and scientific and technological developments.

15. The Government of the Union of Soviet Socialist Republics writes, in relation to the report to be prepared under paragraph 1 (d) of Assembly resolution 2450 (XXIII):

"It would be useful if the report dealt in particular with the following points: (1) the influence of scientific and technological developments on the intellectual, spiritual and moral qualities of people; (2) the impact of scientific and technological developments on the present situation regarding literary and artistic works and access of the general public of such works; (3) the link between scientific and technological progress and inventiveness and the stimulation of scientific and technological thought; (4) the application of science and technology to improve administrative processes in various spheres of communal life and the provision of safeguards against possible abuses resulting in violations of human rights." 7/

16. The Government of the Federal Republic of Germany refers to specific articles of the Universal Declaration of Human Rights in connexion with the problem under discussion:

"[T]he Federal Government would like to reaffirm its view that ... the principles laid down in the Universal Declaration of Human Rights of 1948 should be accorded special importance in the application of technical progress. It would draw attention in particular to Article 3 (Liberty of person); Article 4 (slavery and servitude in all their forms); Article 5 (torture and degrading treatment); Article 10 (fair trial); Article 12 (no interference with privacy, family and home); Article 13 (freedom of movement); Article 18 (freedom of thought, conscience and religion); Article 19 (freedom of opinion and expression); Article 23 (right to work and free choice of employment); Article 24 (right to reasonable limitation of working hours); Article 26 (right to education); Article 27 (right to participation in cultural life). The Federal Government holds the view that the growing dangers arising from technical advances for the substance of these rights and the possibilities for their protection deserve special attention and should be taken into account in the preparation of the report of the United Nations Secretary-General." 8/

7/ Information furnished by the Government of the USSR on 29 August 1975.

8/ Information furnished by the Government of the Federal Republic of Germany on 3 July 1975.

17. There is without doubt a close connexion between the intellectual, spiritual, cultural and moral advancement of humanity and the protection of human rights. Intellectual and cultural advancement is linked with articles 19, 9/ 26 10/ and 27 11/ of the Universal Declaration of Human Rights. Spiritual development is promoted by the observance of article 18 12/ of the Declaration, and moral development by the requirement of article 1 that "All human beings ... should act towards one another in a spirit of brotherhood". Concepts of spiritual and moral development are also associated with ideas of human dignity and worth, which are referred to in the preamble to the Declaration and article 1 thereof. 13/ Furthermore, article 22 recognizes that the realization of economic, social and cultural rights is indispensable for a person's dignity and the free development of his personality; it reads:

"Everyone, as a member of society, has the right to social security and is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality."

18. One member of the Group specifically expressed approval of the content of the last previous paragraph. Another expressed the view that "human development" is a moral notion which includes economic and social development.

19. Chapters II-V of the present document review analytically the previous documents which form parts of the study of human rights and scientific and technological developments 14/ and which describe the threats and dangers to human rights posed by such developments and, on the other hand, the ways in which they benefit such rights. Other documents are also mentioned where relevant. Reference must be made to the documents themselves in this connexion, however, as it is not practicable for the Secretariat in the present document to summarize these statements of threats, dangers and benefits. Nor would it be easy for him in many connexions to suggest whether the total effect of recent developments on any given right has been, on balance, harmful or beneficial. Chapters II-V also take into account all the other contributions made to the present report and have in mind the above-mentioned concept of a two-way "relationship" between scientific and technological progress and the intellectual, spiritual, cultural and moral advancement of humanity.

20. While Chapters II-V are organized under headings relating to separate human rights, Chapter VI deals with some areas in which recent scientific and technological developments have an impact on more than one right.

9/ See para. 82 below.

10/ See para. 108 below.

11/ See para. 108 below.

12/ See para. 79 below.

13/ See paras. 30-31 below.

14/ Such of these as had been completed before February 1976 are referred to in document E/CN.4/L.1313. The papers referred to in the present document are not, however, limited to these.

21. Chapter VII, on methods adopted or proposed for the protection on the national level of human rights against threats posed by recent scientific and technological developments, is made up partly of references to relevant material contained in earlier circulated documents relating to specific rights and partly of material, not already circulated as part of the study of human rights and scientific and technological developments (including contributions made specifically to the present report), relating to aspects of science policy, especially technology assessment, which concern the impact of science and technology on human rights more generally. The application of methods and policies appropriate to the circumstances is clearly an aspect of achieving the correct relationship between scientific and technological progress and the intellectual, spiritual, cultural and moral advancement of humanity.

22. An issue which is different from the impact, harmful or beneficial, of science and technology on human rights and the protection of rights against harmful effects is the question of the positive uses to which modern science and technology may be put in the interests of the promotion of human rights. This is the subject of Chapter VIII, which consists of references to documents in which these uses have already been explored, and contributions made specifically to the present report.

23. Finally, Chapter IX, dealing with possible international action, discusses a possible Declaration on Human Rights and Scientific and Technological Development and suggestions which have been made for international technology assessment procedures. On both matters, the proposals of the Group and of others are described.

24. It should be added that, in the present report, an attempt has been made to exclude pure statements of fact taken from the discussions of the Group or from the other contributions made to this report. The documents already circulated on human rights and scientific and technological developments, to which cross-references are contained in the present report, contain a wealth of factual information, and it has seemed that to include in the present report factual statements taken from the results of only one of several enquiries made by the Secretary-General would give an unbalanced impression.

25. In preparing the Secretary-General's reports on human rights and scientific and technological developments in pursuance of the relevant resolutions of the General Assembly and the Commission on Human Rights, an attempt has been made so far to concentrate upon existing threats or benefits to human rights, and to avoid speculation as to the future. It has also been necessary to have in mind the need to deal with what are recognized human rights and with what is recognized as being human, and to restrict enquiries to "recent" scientific and technological developments, in view of the appearance of that word in the second preambular paragraph to resolution 2450 (XXIII).

26. For instance, most of the discussion of the possible impact upon human beings of recent developments in biology concerns the future. The Secretary-General's preliminary report on his study of human rights and scientific and technological developments observed that: "Possibilities discussed by writers include: artificial inovulation; in vitro fertilization; parthenogenesis; choice of sex of offspring before conception; creation of human beings by an a-sexual process called cloning; manipulation of the D.N.A. molecule so as to interfere with the processes of heredity("genetic surgery"); the improvement, by procedures adopted before birth, of the future intelligence of a child, and the creation of part-human

chimeras."^{15/} Writers vary in the extent to which they probe into the future in this connexion. In addition, much of the speculation in question is based upon the assumption that procedures which have proved possible in relation to other forms of life will eventually also prove possible in relation to man. The Secretary-General's preliminary report stated that: "Having referred to certain current speculation concerning the possible future abuse of 'genetic engineering', an editorial in Nature, vol. 224 (27 December 1969), p. 1242, recalls that 'there can be no simple assurance that the rudimentary manipulations with bacteria and viruses which are now possible or within sight will certainly be applicable to mammalian systems'." ^{16/}

27. In addition to those mentioned in the last paragraph, topics which have been omitted so far from the Secretary-General's studies have included: (i) possible control of human behaviour, contrary to human rights, by the use of electrical stimulation of the brain through intra-cranial electrodes; (ii) "aversion therapy"; (iii) the development of artificial organs, other than the procedure of renal dialysis; (iv) problems arising from the possibility of "sex changes"; (v) abortion as a general topic; (vi) research performed on fetuses; (vii) contraception as a general topic; (viii) sterilization, voluntary and compulsory, as a general topic; (ix) castration; (x) compulsory detention for treatment; (xi) universal medication or immunization and (xii) weather modification as a future weapon of war. The Secretary-General is aware that problems arise in these connexions, ^{17/} but has excluded them so far from his enquiries in view of one or other of the above-mentioned limitations created by the governing resolutions.

28. It will be noted, however, that the Group's Statement, quoted in paragraph 4 above, recommends the consideration of the possibility of drafting a Declaration on human rights and scientific and technological developments, the topics covered by which would include some not so far examined as part of the study of human rights and scientific and technological developments: (i) the use of artificial organs, (ii) genetic manipulation of microbes, and (iii) potential modifications of the human genome. Attention should also be drawn to the Group's stress on the rights of future generations, and, more immediately, of the right of the child to be born physically and mentally sound.

29. Furthermore, the study of human rights and scientific and technological developments has not, previously to the present document, dealt with (i) the possibility of a Declaration on the topic, (ii) technological assessment on the national level, or (iii) technology assessment on the international level.

^{15/} Document E/CN.4/1028/Add.2, para. 187, foot-note 146.

^{16/} Document E/CN.4/1028/Add.2, para. 187, foot-note 147.

^{17/} Some are referred to by the World Health Organization in document E/CN.4/1173.

II. SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENTS AND
THE DIGNITY AND WORTH OF THE HUMAN PERSON

30. Article 1 of the Universal Declaration reads:

"All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood".

31. The first and fifth preambular paragraphs of the Universal Declaration make reference to the dignity and worth of the human person:

"Preamble

"Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world,

...

"Whereas the peoples of the United Nations have in the Charter reaffirmed their faith in fundamental human rights, in the dignity and worth of the human person ..."

32. Some recent scientific and technological developments create threats to human dignity rather than to any of the rights protected by specific articles of the Universal Declaration. Thus the concern has sometimes been expressed that the increased expansion of computerization of personal data may result in a "dossier society" which would have "dehumanizing" effects on the individual.^{1/}

33. One report prepared by the Secretary-General in accordance with General Assembly resolution 2450 (XXIII) bears the following title, taken from paragraph 1(b) of the resolution: "Protection of the human personality and its physical and intellectual integrity, in the light of advances in biology, medicine and biochemistry". One section of that report deals with the dignity of the human person, viewed in the light of the existence of techniques for the artificial prolongation of certain bodily functions after cessation of the cerebral function.^{2/} One member of the Group maintained that people have a right to die in dignity and that, if a person in an irreversible coma were being kept alive artificially by machines, to stop the machines would not be a homicide.

34. Questions of human dignity also arise in connexion with the need for free and informed consent to be given to certain procedures; the report mentioned in paragraph 33 above deals in this connexion with: the question of free consent

^{1/} E/CN.4/1142, paras. 66-69. Moreover it may be argued that the moral advancement of humanity, in the sense of an increased sense of responsibility, is not promoted by the tendency to rely upon computers to make decisions which should be based partly on the value judgements which are not quantifiable and therefore not capable of being stored in a computer. (See document E/CN.4/1142/Add.1, paras.57-58).

^{2/} Document E/CN.4/1172/Add.1, paras.245-270.

as applied to living donors in transplant operations;^{3/} the question of consent as applied in cases of transplants from the dead - advance consent of the donor and consent of his relatives;^{4/} and the protection of the individual against unjustified experiments, including the question of free and informed consent to experiments performed on the individual.^{5/}

35. One member of the Group pointed out that the best non-living donors of organs are very often relatively young and undiseased persons who, not having thought of the imminence of death or reconciled themselves to the fact that they would die sometime, had never made any certificate that after their deaths their parts could be donated to other individuals who needed them. Their death could have happened through some injury or accident, automobile accidents in particular, which had destroyed any possibility of recovery of the brain. Since their sound physical parts were available for the benefit of other living individuals who need them, a member of the Group asked whether they could not be used without the consent of the individual who had died. Another related question was whether in such a case the nearest relatives would not have the right of determination of whether the organs should be donated or not.

36. Questions of free and informed consent also arise in relation to the use of psychological and physical examinations for non-medical purposes.^{6/} They also present themselves in relation to the possible abuse of drugs, as a means of control, for purposes not connected with medical therapy and inconsistent with basic human rights; this question has been explored in relation to hyperkinetic children, psychiatric patients and prison inmates, and in relation to the possible abuse of drugs on the part of the public authorities.^{7/} Questions of consent by the parties concerned arise in connexion with artificial insemination.^{8/} Attention has also been drawn to techniques of subliminal suggestion whereby an individual's thoughts and personality may be influenced without his consent.^{9/}

37. The dignity of the patients concerned may arise in connexion with the question whether there is a point beyond which surgical technology should not be applied, for the prolongation of life or the relief of symptoms, if the result is severely to handicap the patient.^{10/}

^{3/} Document E/CN.4/1172/Add.1, paras.140-183.

^{4/} Document E/CN.4/1172/Add.1, paras.184-213.

^{5/} Document E/CN.4/1172/Add.2, paras. 535-537 and E/CN.4/1172/Add.3, paras.183-233 and 280.

^{6/} E/CN.4/1116, paras.222-224.

^{7/} See document E/CN.4/1172/Add.2, paras.513-534. For a contrasting view, see Chapter 7, "Technology and the rediscovery of politics", in Victor C. Ferkiss, Technological Man. The Myth and the Reality, pp.133-169.

^{8/} Document E/CN.4/1172, paras.75-79.

^{9/} Doc. E/CN.4/1142/Add.2, paras.55-57.

^{10/} See doc. E/CN.4/1172/Add.1, paras.403-434.

38. A question relating to the dignity of the person also arises in connexion with the attitudes adopted towards defectives in view of advances in genetics.^{11/}

39. Though the development may be inevitable and beyond remedy, concern has been expressed over the depersonalization of medical care, due to specialization, with resultant threats to the dignity of patients.^{12/} A member of the Group maintained that medical specialists were often so engrossed with the technical possibilities of their own specialisms that they overlooked the totality of the patient. At the United Nations Seminar on Human Rights and Scientific and Technological Developments, Vienna, Austria, 19 June-1 July 1972, several speakers drew attention to the psychological inferiority felt by patients entering modern hospitals.^{13/}

40. A contribution to the study of human rights and scientific and technological developments received from the Universal Postal Union includes the remarks that "despite the considerable progress made in motorization, mechanization, automatization and even automation [in postal services], man remains the essential, indispensable and irreplaceable element in many sectors" and that "time and motion studies will always be very useful, but they must always be based on the principle that machines must adjust to man".^{14/}

41. Members of the Group made certain further observations concerning the dignity of the individual.

42. It was observed that the concepts of dignity and of human personality had changed with time and were not the same in all parts of the world. In some countries and in some cultures, people believed that the heart is a part of the ego, but in other countries it is only a physical object, and, if it does not function properly, it can be changed. The blood had for centuries been considered as identified with the person, not merely with his life. But now many people, at least in some cultures, accepted by transfusion any kind of blood. The only thing which a doctor verified was its compatibility with that being replaced. The problems of transplantation of organs and of artificial organs directly touched the dignity of the human person, but it did not raise quite the same problem for the African, Latin American or Japanese, because their cultural, psychological and sociological ideas concerning dignity were different. A man in a developing country in Africa or Latin America, for example, could not agree to the replacement of certain physical parts, a procedure which would be normally accepted by a North American or European.

^{11/} Document E/CN.4/1172/Add.3, paras.97-103.

^{12/} See for instance Vannevar Bush, Science Is Not Enough, New York 1965, p.153; Herrmann L. Blumgart, "The Medical Framework", Daedalus. Journal of the American Academy of Arts and Sciences, Spring 1969, Ethical Aspects of Experimentation with Human Subjects, p.249; Henri Péguignot, "Scientific and Social Aspects of Modern Medicine", UNESCO, Impact of Science on Society, Vol. V, No.4, December 1954, pp.204 and 213; Emmanuel Mesthène, Social Change, Mentor, 1970, pp.30-31; Centre Magazine, Vol. II, No.6, November 1969, p.35; Heden, Carl-Goran, "Perspectives on the Medical Impact of Enzyme Engineering"; C.I.O.M.S. Round Table Conference on Human Rights, November, 1973, p.4.

^{13/} ST/TAO/HR/45, para. 44.

^{14/} E/CN.4/1083, Annex.

43. A member of the Group said that the uniqueness of the individual is something which appeals very much to the geneticist because there is virtually no possibility that two individuals in the species will be genetically identical, with the one exception of identical twins or triplets, who do come from the same fertilized egg and do have the same genes. Even identical twins had a very distinct sense of their own individual personality, of the individuality of one as against the other, to such an extent that often they preferred to live apart, so that they could go their own ways.

44. One expert contributor wrote that unhampered intellectual, spiritual, cultural and moral advancement of a human being is determined to a great extent by the standard of living. The higher the living standard the more objective conditions should there be for the development of the human personality. This put the individual in the developing countries at a great disadvantage.

45. An aspect of the development of the human personality is the proper use of leisure, and, to the extent that modern science and technology have created more leisure time for many individuals,^{15/} they have generated enquiries as to how that free time can best be spent. No-one of course would claim that any specific activities should or could be imposed.

46. References were made by members of the Group to the question of leisure. One recalled that one of the results of the eighteenth century technical revolution was an increase in the productivity of human beings. Another result was the increase in the number of workers engaged in industry, who, instead of working 12 or 14 hours a day, now worked 7 hours to 8 hours a day. As a result, the leisure of people had increased immensely. Moreover, it would certainly increase. Unemployment arose simply because there was a lack of organization in society. Working hours could be made shorter and eventually might be reduced to 5 hours. How should people use this increased leisure? One view expressed was that people need a higher education not merely to work properly, but to enjoy leisure. Another view was that not everybody can be an intellectual. Emotions played an important part in the use of leisure. Sport had an emotional element; one did not need to be very intellectual to enjoy sport. But it was a part of the life of a large number of people. Television provided a possibility for people to enjoy art and music.

47. An expert contributor writes:

"Leisure is one of the social factors whose role gradually increase in the modern world. In our study we define leisure as the part of time out of work at the free disposal of man, which can be used for rest, entertainment and personality development.

^{15/} See doc. E/CN.4/1141, para.18. One writer minimizes the amount of extra leisure which the population as a whole may hope to derive from technological advances, for the reasons, among others, that: (i) many occupations cannot be greatly affected by technology, from the point of view of time occupied; (ii) work in the service occupations is likely to expand as a result of the increase of leisure in production occupations. (Victor C. Ferkiss, Technological Man. The Myth and the Reality, New York and Toronto, 1970, pp.116-118.).

"In modern societies this sphere of time has been gradually and systematically widening as a result of the development of technology, increase in productivity and progress in work organization.

...

"Analysing the role of leisure in the development of the human personality we should pay attention to at least three aspects:

- (a) recreation function
- (b) development function
- (c) participation in culture

...

"[Participation in culture] is evidently two-sided: it serves the individual development of a human being and plays a significant part in the creation of modern structures of community life. Participation in culture is a specific social situation in which important values, standards and attitudes are presented to and strengthened in the individual. Participation in culture is an important form of socialization and education and leads to formation of social personality. In the age of scientific-technological revolution this form becomes particularly significant since, due to mass media, there is a possibility to mould specific features, attitudes and aspirations in the members of society on a very large scale. Such a possibility has never existed before. Participation in culture helps construct a modern personality type with such features as productivity, discipline, diligence and rationality.

"Mass access to culture is one of the main principles of a modern society. In the developed countries it helps maintain positive elements of history and national tradition (and thus strengthens patriotism in its proper sense); in the developing countries it helps create national and language ties. And national consciousness is an important basis for mobilization of social powers round common targets.

"Due to the general access to culture the individual has an opportunity to acquaint himself with other nations' cultures and, consequently, with all-human culture values. All this promotes understanding and co-operation between nations for the benefit of justice and peace.

"Thus leisure becomes one of the most important social factors in cultural and spiritual development of mankind and its utilization can have positive or negative effects on both the individual and society".

48. Some writers see problems in the way of stimulating the creative use of leisure, due to the nature of the labour which occupies a worker's non-leisure time. Dr. Erich Fromm writes:

"... If man is passive in the process of production and organization, he will also be passive during his leisure time. If he abdicates responsibility and participation in the process of sustaining life, he will acquire the passive role in all other spheres of life and be dependent on those who take care of him. We already see this happening today. Man has more leisure time than before, but most people show this passiveness in the leisure which is forced upon them by the method of alienated bureaucratism. Leisure time is mostly of the spectator or consumption type; rarely is it an expression of activeness".16/

49. Professor Herbert J. Muller writes:

"One possible compensation for the boring jobs workers are condemned to, the shorter work week and the prospect of increasing leisure, is regarded rather as another source of alienation. As Sebastian de Grazia points out, the villager of the past had no problem of free time; he always knew what to do with it and had traditional, communal ways of enjoying it. The problem arose with industrial man, who had no such tradition. Uncreative or unmanly work makes it harder for people to use their leisure creatively, for they may see in it chiefly a means of distraction or escape from work; unable to find themselves on the job, they may be as unable during their free time. Sometimes they may work as hard at enjoying themselves or feel as harried by the clock - they 'don't have time' for a lot of things. More often they are passive, merely taking in. Since they have not been educated for leisure, they are largely dependent on the mass media and the admen [advertising men] for ways of passing time, and their consumption of entertainment may become as compulsive as their consumption of other goods.

"... [T]he enjoyment of leisure is too often not spontaneous, active, creative, or deeply satisfying ..."17/

16/ Erich Fromm, The Revolution of Hope. Towards a Humanized Technology, New York and Toronto, 1968, p.110.

17/ Herbert J. Muller, The Children of Frankenstein, A Primer on Modern Technology and Human Values, Bloomington and London, 1970, pp.335-336.

III. SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENTS AND THE RIGHT TO EQUALITY

50. The first paragraph of Article 2 of the Universal Declaration reads:

"Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status".

51. One of the rights set forth in the Universal Declaration is the right of everyone "to share in scientific advancement and its benefits" (article 27 (1), and problems of equality as between peoples in different parts of the world arise in this connexion. Some were discussed at the United Nations Seminar on Human Rights and Scientific and Technological Developments, Vienna, Austria, 19 June-1 July 1972, where the agenda included the impact of recent scientific and technological developments on peoples and nations, with particular attention to developing countries. 1/ The relevance of Article 27 (1) of the Universal Declaration to the situation of developing countries is recognized by information forwarded by UNESCO partly for use in the present study. Speaking of UNESCO's activities in pursuance of the provisions of Article 27 (1), UNESCO writes: "A second aspect of the programme will be the elaboration of measures to enable developing countries to obtain easier access to modern science and technology". 2/ The International Atomic Energy Agency has reported that "the share of developing countries of installed nuclear capacity is, ... for a number of technical and economic reasons, disproportionately low - only about 7 per cent of the total nuclear capacity of 1980 will, for instance, be in these countries". 3/

52. A United Nations Seminar on the Effects of Scientific and Technological Developments on the Status of Women was held in Iasi, Romania from 5 to 18 August 1969. 4/

53. A report by the Secretary-General on the protection of broad sectors of the population against social and material inequalities, as well as other harmful effects which might arise from the use of scientific and technological developments, has appeared as document A/10146.

54. Questions of equality of treatment arise in those parts of the Secretary-General's report on protection of the human personality and its physical and intellectual integrity, in the light of advances in biology, medicine and biochemistry (E/CN.4/1172 and addenda) which deal with (i) the question whether advanced medical techniques for the prolongation of life should be applied to some patients as long as the cost involved curtails the provision of less sophisticated medical care, or the provision of other social benefits, for the many; 5/ (ii) the criteria which should apply to the choice of recipients, if any, of advanced medical techniques for the prolongation of life and to the choice of recipients of organs available for transplantation while these are scarce; 6/ and (iii) the manner in which medical treatment shall be allocated in those countries or areas where the point has been reached, or is imminent, where the economy cannot accord to every sick person the entire range of available medical treatment from which he could benefit. 7/

1/ ST/TAO/HR/45, paras.93-113.

2/ See further document E/CN.4/1196.

3/ E/CN.4/1083, Annex.

4/ ST/TAO/HR/37.

5/ E/CN.4/1172/Add.1, paras. 304-324.

6/ E/CN.4/1172/Add.1, paras. 325-353.

7/ E/CN.4/1172/Add.1, paras. 354-376.

55. One member of the Group of Experts pointed out that keeping aged people alive could be highly expensive, and that the resources needed were provided to them to the detriment of others, especially the poor. Another member of the Group maintained that some countries which had recently become independent could not at present even afford to operate their medical services according to the type of pattern inherited from the metropolitan powers. A crucial, pressing and painful question therefore had arisen. Should they give a comprehensive service to many people, or should they have for instance specialized renodialysis and cardio-vascular surgery institutes? Should they neglect medical needs in rural areas? Should they neglect a particular part of the population at the expense of another? What was a luxury and what was a minimum human right?

IV. SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENTS AND
CIVIL AND POLITICAL RIGHTS

1. Article 3 of the Universal Declaration of Human Rights

56. Article 3 of the Universal Declaration reads:

"Everyone has the right to life, liberty and the security of person".

57. It has been recognized that many of the surveillance devices which have been studied by the Secretary-General in the light of their impact on the right to privacy may have benign or beneficial uses; 1/ subject to proper safeguards they may legitimately be used in crime prevention and law enforcement, which protect the right to life and security of person. Also useful in the same connexion are other devices or techniques which did not seem to pose threats to the privacy of the individual, including the control of traffic speed by radar.

58. Much of what has been said in paragraphs 34-36 above concerning issues of consent is relevant also under the present heading. In addition, the following aspects of the right to life and the right to security of person have been dealt with in the report on protection of the human personality and its physical and intellectual integrity, in the light of advances in biology, medicine and biochemistry: the question of the risk run by living donors in transplant operations, viewed in the light of the likely benefit of each operation; 2/ the right to life as applied to donors in transplant operations which a donor cannot survive, viewed in the light of suggested new medical definitions of death; 3/ a child's right to life, as opposed to the burden borne by a child subject to genetic defect, viewed in the light of the development of genetic diagnosis and counselling; 4/ measures necessary to safeguard the health, safety and life of patients who are exposed to electrical, electronic, mechanical and other technical devices during diagnostic or therapeutic procedures; 5/ and the very delicate question of whether there is a point beyond which intensive methods to keep incurably ill or very elderly patients alive should no longer be applied. 6/

59. The discussions of the Group touched upon the right to life as applied to donors in transplant operations which a donor cannot survive, although as part of a more general discussion of the dignity of the human person as it relates to the time when death may be said to have occurred. It was pointed out that there are different levels of death: cell death, tissue death, organ death and total death; these were not inseparable, but, in terms of the dignity, the integrity and the wholeness of the individual, a great distinction was to be made. A great many of a

1/ Document E/CN.4/1116, paras.25 and 114-118.

2/ Document E/CN.4/1172/Add.1, paras.113-139.

3/ Document E/CN.4/1172/Add.1, paras.214-244.

4/ Document E/CN.4/1172/Add.3, paras.126-139.

5/ Documents E/CN.4/1172/Add.1, paras.438-439 and E/CN.4/1172/Add.3, paras.146-182.

6/ See document E/CN.4/1172/Add.1, paras.377-402. As to this question, see also para.33 above and para.133 below.

person's cells were lost every day; blood cells died by the millions, cells came off from the tissues of the mouths and intestines and die. These did not constitute total death. In the nervous system, cell deaths occurred at the rate of several hundred thousand a day, so that one aspect of ageing was that there were actually fewer cells in the brain that were functioning neurologically than in a young person. That did not affect a person's dignity, integrity, personality or life consciousness. On the tissue level, one could lose a large patch of skin and it could be replaced; it could grow back and its loss did not constitute death for the self. In ancient medicine there had been a clear distinction between vital organs and those that were not considered to be vital. Loss of a vital organ would cause death of the human totality. The conception of what is a vital organ had been gradually changed, because it was seen that after all a kidney was not a vital organ. Even if a person lost both kidneys, they could be replaced by transplant or by (at least for a time) a machine. With the great developments in artificial organs that are coming it would perhaps be possible before many years to implant an artificial kidney or an artificial heart or an artificial pancreas, and the individual would continue to function. Such an individual need not lose a sense of self, consciousness, integrity or dignity. This was why brain death is now considered to be equivalent to the real death of the human individuality that possesses the dignity. Consequently, if brain death had actually been certified to have occurred on the basis of the best criteria which the physicians can assemble, although the heart was still beating and the lungs were still pumping air into the blood, through mechanical means, there was no reason to say that the individual was not dead, in the sense of the loss of individuality, personality and mental function. If there is a need for certain organs to be taken from such a body - an eye, a kidney or a heart - should this not be then permissible?

2. Article 5

60. Article 5 of the Universal Declaration reads:

"No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment".

61. The observance of this right includes the protection of the individual against unjustified experiments. ^{7/} It may be recalled that the equivalent article (7) of the International Covenant on Civil and Political Rights consists of the text quoted above with the addition of the words: "In particular, no one shall be subjected without his free consent to medical or scientific experimentation".

3. Article 10 and Article 11, paragraph 1

62. Article 10 and article 11, paragraph 1 of the Universal Declaration read:

"Article 10

Everyone is entitled in full equality to a fair and public hearing by an independent and impartial tribunal, in the determination of his rights and obligations and of any criminal charge against him.

^{7/} See documents E/CN.4/1072/Add.2, paras.535-539 and E/CN.4/1072/Add.3, paras. 183-267 and 280.

"Article 11

1. Everyone charged with a penal offence has the right to be presumed innocent until proved guilty according to law in a public trial at which he has had all the guarantees necessary for his defence."

63. The question is being asked whether invasion of privacy by means of listening and recording devices or of certain psychological and physical tests in connexion with penal proceedings do not lead to violations of existing guarantees against self-incrimination, an aspect of the right to a fair hearing dealt with in the above-mentioned provisions of the Universal Declaration and in the International Covenant on Civil and Political Rights, article 14 (3) of which requires that in the determination of any criminal charge against him, everyone shall be entitled to certain minimum guarantees, including "(g) not to be compelled to testify against himself or to confess guilt". 8/

64. Computerization of personal files has been also viewed as having a specific impact on what is called in the Anglo-American legal systems the due-process tradition, as the data collected in these files are relied upon to determine rights, benefits or obligations of the individual. 9/ The use of computerized personal data systems may have harmful effects on human rights in relation to inaccuracy and obsolescence of data, access to and sharing of data, accumulation of data and the record-keeping personnel. The human rights defined above may be adversely affected by one of these negative consequences. For example, inaccuracies in personal data, due to the use of computers, may affect the right to a fair and public hearing, if the computerized information is used as evidence in courts. 10/

4. Article 12

65. Article 12 of the Universal Declaration reads:

"No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks".

66. The Secretary-General has produced a report on respect for the privacy of individuals and the integrity and sovereignty of nations in the light of advances in recording and other techniques. 11/ The impact of recent scientific and technological developments on the right to privacy was also discussed at the above-mentioned seminar held in Vienna, Austria, in 1972. 12/

8/ E/CN.4/1116, paras.50-52 and 221.

9/ E/CN.4/1142, paras.65, 70 and 111-117.

10/ E/CN.4/1142, paras.70 and 312-314.

11/ E/CN.4/1116 and Corr.1, Addenda 1-4 and Addendum 3/Corr.1.

12/ ST/TAO/ER/45, paras.26-27

67. Infringements upon privacy by modern methods of auditory and visual surveillance may, under certain circumstances, violate guarantees against arbitrary interference with the family; with the home, including existing requirements in some countries for judicial warrants or other authorization before governmental agents may enter a dwelling to search it and to seize specified objects; with the secrecy of correspondence, in particular through the tapping of telephone conversations; and with guarantees against attacks on one's honour and reputation. 13/

68. The use of computerized personal data systems may have the following adverse effects on the right to privacy: (a) by gathering and storing in one place a greater amount of data pertaining to the private life of the individual; (b) by disseminating the information to a wider audience than the individual consented to or anticipated when he originally surrendered the information, infringing thus upon its confidentiality. 14/

69. The privacy and dignity of the individuals concerned is involved in the question of the publicity given to the identity of the persons involved in transplant operations. 15/ Questions of confidentiality and marital privacy arise in connexion with artificial insemination 16/ and the use of genetic data obtained by modern methods of genetic diagnosis. 17/

70. The discussions of the Group on human rights and computer data banks concentrated particularly upon the use of data banks for the storage and retrieval of medical information concerning individuals. Reservations were expressed concerning the advisability of complete confidentiality in relation to information stored in data banks. If a person had a criminal record, it was said, this could hardly be considered a piece of private information that should not be communicated to authorities other than those which had stored the information in the first place. If a candidate for high political office had a medical record which showed serious mental instability or a progressive malady, that was not a private or personal piece of information that should be withheld from the public. Another human problem arose if a prospective spouse wanted to know whether the person whom he or she expected to marry was a carrier of a certain condition, because, if the enquirer was also a carrier, medical problems might arise for their children. Was there an obligation to disclose this information to the prospective spouse? Some judges had held that this information could be withheld. Furthermore, since it was suspected that, under conditions of oxygen deprivation (as in high altitudes), a person with the recessive sickle-cell trait experiences difficulties and may not function well, some airlines had decided that they would not employ as pilots or co-pilots, or even as cabin attendants, persons with that genetic make-up. On the

13/ E/CN.4/1116, paras. 50-52.

14/ E/CN.4/1142, paras. 64, 70 and 118-120.

15/ See document E/CN.4/1172/Add.1, paras. 271-290.

16/ Document E/CN.4/1172, paras. 29, 49, 50 and 85.

17/ Document E/CN.4/1172/Add.3, paras. 57-68.

other hand, it was pointed out in the Group's discussions that black persons in certain communities had protested that this is a kind of stigmatization that prevents them from access to good employment since the sickle-cell trait occurs with greatest frequency among persons of African origin; accordingly restrictions had been put upon airlines from obtaining the information in question from medical data banks. The question had also arisen whether this kind of information should be released to life insurance companies, because some such companies had been penalizing the individuals concerned by requiring higher premiums for life insurance, although they have in general a perfectly normal life expectancy. Some compromise must therefore be worked out between the right of the individual to privacy of information, and the needs of society to be able to estimate the probable future performance of an individual and his reliability.

71. Some of the topics mentioned in paragraphs 72-75 below in relation to the right to found a family may also be regarded as being of concern to a person's right not to be subjected to arbitrary interference with his family life.

5. Article 16, paragraph 1

72. Article 16, paragraph 1, of the Universal Declaration reads in part:

"1. Men and women of full age, without any limitation due to race, nationality or religion, have the right to marry and to found a family ..."

73. A governmental opinion has been recorded to the effect that artificial insemination may be compatible with the right to found a family. 18/

74. A question relating to the right to found a family, which has been discussed in connexion with "the genetic burden" placed upon mankind by the fact that increasing numbers of persons suffering from genetically transmissible diseases can be kept alive until they are able to procreate, is the possibility of sterilization and of prohibiting marriage by persons likely to have defective children. 19/ Topics discussed in connexion with the human rights implications of pre-natal genetic diagnosis and genetic counselling have included the rights of parents viewed in relation to the rights of society, 20/ their right to procreate viewed in the light of the burden borne by a child subject to a genetic defect 21/ and the apparent absence of any legal obligation on a person harbouring a deleterious gene to reveal this fact to his or her spouse or potential spouse. 22/

75. The statement of the Group which is quoted in paragraph 4 above recommends, in its paragraph 6, that a better definition be given of the duties of the individual to the community and of the rights of future generations. For example, it seemed to the Group, according to the statement, that the crisis in growth of the world's population must lead to some constraint on the individual right to reproduce, and that

18/ E/CN.4/1172, para.18. See also paras.27, 30, 36-40 and 55 of that document.

19/ Document E/CN.4/1172/Add.3, paras.31-50.

20/ Ibid., paras.60, 64 and 104-125.

21/ Ibid., paras.126-139.

22/ Ibid., para.58.

the right of the child to be born physically and mentally sound takes precedence over the rights of parents to reproduce. The feeling had been expressed in the discussions of the Group that the provision quoted above from Article 16, paragraph 1, of the Universal Declaration was no longer up to date, in the light of current demographic data; acceleration in population growth certainly presented a greater threat ^{23/} than it had in 1948, when the Universal Declaration was adopted. It was suggested that perhaps a reference to an upper limit of children for each married couple should be added to the article. Taxation of large families was mentioned as a possible policy for limiting population growth. On the other hand, it was pointed out by one member of the Group that the capacity of parents to support their children was a factor to be borne in mind, while another member maintained that to base population policy on such an approach might be regarded as genocide by certain minority groups. It was conceded that evolution in thinking on the matter had not yet produced any precise conception which might be expressed in a simple formula which could be easily substituted for the one in the Universal Declaration. It was agreed by the Group that the United Nations Secretariat and the United Nations system as a whole, including the specialized agencies, should concentrate on this problem, having in mind the interests of the individual, the State (or the national community represented by the State) and the species.

6. Article 17, paragraph 1

76. Article 17, paragraph 1 of the Universal Declaration reads:

"1. Everyone has the right to own property alone as well as in association with others".

77. What is said in para. 57 above concerning crime prevention and law enforcement in connexion with the right to life and the right to security of person applies also to the right to property.

78. Questions arise as regards the support rights and inheritance rights of children born of artificial insemination. ^{24/}

7. Article 18

79. Article 18 of the Universal Declaration reads:

"Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change his religion or belief, and freedom, either alone or in community with others and in public or private, to manifest his religion or belief in teaching, practice, worship and observance."

80. The right to freedom of thought, conscience and religion may be adversely affected by invasions of privacy through modern surveillance devices or by psychological or physical examinations used for non-medical purposes. ^{25/}

^{23/} See paras. 131-136 below.

^{24/} E/CN.4/1172, paras. 94-97 and 99-102.

^{25/} E/CN.4/1116, paras. 50-52 and 221.

81. It may be relevant to quote here a statement made by the Director-General of UNESCO in 1973:

"13. [A] factor militating against the preservation of cultural values is the general decline in the importance attached to the spiritual aspects of life. The movement began in the industrialized countries but is tending to spread, through the undiscerning adoption by the developing countries, without proper adaptation, of the development models of these industrialized countries. The distinctive feature of this development model is the excessive importance attached to the economic components of a process which, if it is really to deserve to be called development, must take in all man's needs, abilities and aspirations. This has led to societies where the striving after growth, production and consumption tends increasingly to take precedence over all other concerns. Power, material amenities or enjoyment are sought before all else. This is the distortion which lies at the root of the various forms of misuse of science and technology. And where culture is concerned, apart from the fact that such an atmosphere is bound, in the long run, to debase its creative inspiration or to drive it towards systematic protest, even its most authentic products are being caught up into the economic circuit where their commercial value, dependent on considerations which are very largely unrelated to aesthetics, as it were, obscures their cultural value and function. We need only think, for example, of the trade in works of art; how many paintings are there hidden away in the gloom of bank vaults?

14. Culture thus shares the common fate of everything whose realization depends on the maintenance of a certain distance in man between the thinking subject and the active being. This distance, whose existence defers - it may be only for a moment but may sometimes be throughout a life - the practical domination of reality (which is, in fact, the scarcely disguised escape from oneself, the seed of humanity lost in the universe), may be the detachment of contemplation, the cool perspective of critical reflection, the rejection inherent in moral or religious **asceticism**, the soaring flight of artistic creation, or the pure extent of scientific objectivity. It is, in fact, the domain of the spirit and, where it does not exist, the spirit cannot live and man is no longer master of his destiny. There are no longer any values for him, but only machines; in the end, he is a machine himself, a machine for wearing out his life.

15. It is precisely because industrial civilization is steadily reducing the domain of the spirit that this civilization is now being challenged, particularly by young people. Whatever we may think about the forms that challenge takes, it should be clearly understood that this basic questioning, which is reflected, according to temperament, sometimes in protest and sometimes in escapism, is at the core something essentially cultural. It is an instinctive reaction to the need to preserve the cultural dimension of life." 26/

8. Article 19

82. Article 19 of the Universal Declaration reads:

"Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers".

83. The right to freedom of opinion and expression may be adversely affected by invasions of privacy through modern surveillance devices or by psychological or physical examinations used for non-medical purposes. 27/

84. On the other hand, including as it does the right to seek, receive and impart information, this right has also been promoted by many recent technological developments, especially in the area of media of information. This matter is included within the scope of two reports prepared by UNESCO. 28/ At the above-mentioned Vienna seminar, 1972, the impact of improved media of information on the right to enjoy democratic government was discussed. 29/ A report by the Secretary-General on the impact on human rights of electronic communication techniques 30/ describes both their benefits, and the problems which they pose for human rights, including the problem of "information overload", i.e. the capacity of computer communications to furnish the inquirer with far greater volumes of information, often trivial, than he can absorb and utilize within the time span at his disposal and the resulting need to pre-select the type of information that is to be transmitted. 31/

85. One member of the Group drew attention to the following text of Article 20 of the International Covenant on Civil and Political Rights, which limits the application of Article 19 thereof (paragraphs 1-2 of Article 19 closely correspond to Article 19 of the Universal Declaration):

"1. Any propaganda for war shall be prohibited by law.

2. Any advocacy of national, racial or religious hatred that constitutes incitement to discrimination, hostility or violence shall be prohibited by law."

9. Article 20, paragraph 1

86. Article 20, paragraph 1, of the Universal Declaration reads:

"Everyone has the right to freedom of peaceful assembly and association".

87. The right to freedom of assembly and association may be adversely affected by invasions of privacy through modern surveillance devices or by **psychological** and physical examinations used for non-medical purposes. 32/

27/ E/CN.4/1116, paras.50-52.

28/ E/CN.4/1144, paras.45-57 and 221, and A/9227.

29/ ST/TAO/HR/45, para.28.

30/ E/CN.4/1142/Add.2

31/ E/CN.4/1142/Add.2, para.49.

32/ E/CN.4/1116, paras.50-52.

10. Article 21

88. Article 21 of the Universal Declaration reads:

"1. Everyone has the right to take part in the government of his country, directly or through freely chosen representatives.

"2. Everyone has the right of equal access to public service in his country.

"3. The will of the people shall be the basis of the authority of government; this will shall be expressed in periodic and genuine elections which shall be by universal and equal suffrage and shall be held by secret vote or by equivalent free voting procedures".

89. The above-mentioned seminar held in Vienna, Austria in 1972 discussed the impact of recent scientific and technological developments on the right to enjoy democratic government. 33/

90. In much of the discussion of developments in the areas of surveillance devices and procedures, 34/ the use of psychological and physical tests in penal proceedings, 35/ computers, 36/ subliminal suggestion, 37/ psychotropic drugs 38/ and experimental procedures, 39/ there is an underlying fear of the possibility of a technocratic monopolization of power. This possibility is increased by the growing difficulty experienced by the average person and even by people in public affairs in understanding developments in science and technology. 40/ A contribution of the International Federation of Business and Professional Women to the present study included the following:

"It is not unknown for two scientists or two technologists in different fields to be lacking in the facility to communicate with each other. If this inability to communicate within their own closed circles continues to extend to the area of communication between the scientists and technologists and the great mass of the people, we may arrive at a point where the world is dominated by a technological elite, with the people unquestioningly obedient because they lack the knowledge to disagree with any authority.

"Communication in technology should begin in the area of popular education. Scientists and technologists must be encouraged to put their ideas in simple language that can be understood by the man and woman in the street and by their children. This could be done through the schools, through adult education, by education programmes on radio and television, and by articles in newspapers and magazines." 41/

33/ ST/TAO/HR/45, paras.28-32.

34/ E/CN.4/1116, para.124.

35/ E/CN.4/1028/Add.1, para.132 and E/CN.4/1116, para.233.

36/ E/CN.4/1142/Add.1, paras.56 and 64-72.

37/ E/CN.4/1142/Add.2, paras.55-57.

38/ The possibility of using drugs as a means of political control has been touched upon in document E/CN.4/1172/Add.2, paras. 516, 518 and 523-526.

39/ E/CN.4/1172/Add.3, paras. 186-187.

40/ E/CN.4/1142/Add.1, paras.44-46, 56 and 64-73.

41/ Information furnished on 13 May 1969.

91. Apart from the possibility of a technocratic monopolization of power is the danger to which the Government of Thailand has drawn attention, namely that "new [developments in] science and technology ... could serve to strengthen state authority which may adversely lead to an increasingly absolute and suppressive administration. Consequently, rights and freedoms of people could be diminished." 42/

42/ Information furnished on 29 July 1975.

V. SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENTS AND
ECONOMIC, SOCIAL AND CULTURAL RIGHTS

1. Article 23 of the Universal Declaration of Human Rights

92. Article 23 of the Universal Declaration reads:

"1. Everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment.

2. Everyone, without any discrimination, has the right to equal pay for equal work.

3. Everyone who works has the right to just and favourable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection.

4. Everyone has the right to form and to join trade unions for the protection of his interests".

93. A report has been produced by the Secretary-General on the impact of recent scientific and technological developments on the rights to work, to just and favourable conditions of work, to just and favourable remuneration and to equal pay for equal work, and on the right to form and join trade unions. 1/ The above-mentioned seminar held in Vienna, Austria, in 1972 discussed the impact of recent scientific and technological developments on the right to work. 2/

94. An expert contributor to the present study points out the importance of "atmosphere" at work and the readiness of the workers to understand the aims of the firm and to co-operate in order to achieve them. Experiments have revealed, he writes, that many prejudices, opinions and attitudes held by workers cannot be explained by logical reasoning, since most of the traumas and obsessions of people which have been formed in childhood or are due to a change of environment have impaired their objectivity of judgement.

2. Article 24

95. Article 24 of the Universal Declaration reads:

"Everyone has the right to rest and leisure, including reasonable limitation of working hours and periodic holidays with pay".

96. A report by the Secretary-General 3/ and the above-mentioned seminar held in Vienna, Austria, in 1972 4/ both discussed the impact of recent scientific and technological developments on the right to rest and leisure.

1/ E/CN.4/1116, paras.12-102.

2/ ST/TAO/HR/45, paras.33-39.

3/ E/CN.4/1141, paras.10-22.

4/ ST/TAO/HR/45, paras.40-42.

3. Article 25

97. Article 25 of the Universal Declaration reads:

"1. Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.

2. Motherhood and childhood are entitled to special care and assistance. All children, whether born in or out of wedlock, shall enjoy the same social protection."

98. Reports have been produced by the Secretary-General on the impact of recent scientific and technological developments on the right to a standard of living adequate for health and well-being, including the right to food, 5/ the right to clothing, 6/ and the right to housing; 7/ and on the right to social security. 8/

99. The above-mentioned seminar held in Vienna, Austria, in 1972 discussed the impact of recent scientific and technological developments on the right to food 9/ and on the right to health. 10/ Among the food additives discussed in a paper by the Secretary-General are preservatives which increase the amount and quality of food available for consumption. 11/

100. The right to health is promoted by the protection of the public against harm from chemicals introduced into food production, processing, packaging and storage. 12/

101. During the discussions of the Group, the value of electronic data banks for the storage and retrieval of medical information concerning individuals was stressed, although it was recognized that the use of data banks for this purpose gave rise in general to the same problems, especially as regards confidentiality, as their use for other purposes. 13/ The case of a person equipped with a pace-maker was cited as an example of the usefulness of medical data banks. If the pace-maker went out of order, the person's doctor would need to know the relevant medical history. In such a case, the patient has three rights, however, according to a Group member. The first is the right to decide whether any facts be placed in a

5/ E/CN.4/1084, paras.12-57.

6/ E/CN.4/1084, paras.58-89.

7/ E/CN.4/1115, paras.103-124.

8/ E/CN.4/1141, paras.23-28.

9/ ST/TAO/HR/45, paras.51-53.

10/ Ibid., paras.43-50.

11/ E/CN.4/1172/Add.3, paras.272-274 and 277.

12/ See documents E/CN.4/1172/Add.2, paras.540-542 and E/CN.4/1172/Add.3, paras.268-308.

13/ See paras.68 and 70 above.

data bank. The second is the right to know what kind of data will be put into the data bank, as well as the right to check the data. The third is the right to participate in decisions as to the kind of use to which the data will be put.

102. The view was expressed in the deliberations of the Group that, in deciding on priorities for the allocation of funds and personnel in medical research, preference should be given to research aimed at curing diseases which are painful, degenerative and protracted like cancer, rather than at curing ailments which result in relatively swift and painless death like cardio-vascular diseases.

103. The right to medical care arises in connexion with the question of the post-operative rights of a living organ donor, or anyone undergoing experimental procedures, in terms of medical care, and an organ donor's post-operative rights, if any, in relation to the organ recipient. 14/

104. The right to health is involved in the recent proliferation of new drugs and increase in the consumption of drugs 15/ and in the question of the controls under which the use of psychotropic drugs should be permitted, to the extent that they have a beneficial aspect. 16/

105. Complex medical issues arise in connexion with the question of the "genetic burden" placed upon mankind by the fact that increasing numbers of persons suffering from genetically transmissible diseases can be kept alive until they are able to procreate. 17/ While possessing great potential for improving the health of humanity, pre-natal genetic diagnosis and counselling also present intricate problems. 18/

106. Health problems are caused by increased air travel; an instance is the possibility of quick international spread of infection from new strains of influenza before effective remedies can be developed. 19/ Reference has also been made to the sometimes harmful effects of automated processes upon health. 20/

107. In the light of the requirements of the second sentence of the second paragraph of Article 25 of the Universal Declaration, quoted in paragraph 97 above, it should be added that a report by the Secretary-General, on protection of the human personality and its physical and intellectual integrity, in the light of advances in biology, medicine and biochemistry, discusses the legitimacy of children born as a result of artificial insemination. 21/

14/ See document E/CN.4/1172/Add.1, paras.291-303.

15/ See document E/CN.4/1172/Add.2, paras.440-485.

16/ See document E/CN.4/1172/Add.2, paras.486-512.

17/ See E/CN.4/1172/Add.3, paras.3-51.

18/ See E/CN.4/1172/Add.1, paras.435-437 and E/CN.4/1172/Add.3, paras.52-145.

19/ See for instance Brian Macgrath, "Jet-borne diseases", World Health, WHO, October 1971, pp.20-25.

20/ See E/CN.4/1115, paras.61-64.

21/ E/CN.4/1172, paras.72 and 81-93.

4. Article 26, paragraphs 1-2, and article 27

108. Article 26, paragraphs 1-2, and article 27 of the Universal Declaration read:

"Article 26

"1. Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit.

"2. Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace.

...

"Article 27

"1. Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.

"2. Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author".

109. UNESCO has dealt with the impact of scientific and technological developments on the rights laid down in article 26, paragraphs 1 and 2, and article 27 of the Universal Declaration; 22/ and also with the problem of the preservation and further development of cultural values in the light of recent scientific and technological developments. 23/

110. The above-mentioned Seminar held in Vienna, Austria, discussed the impact of recent scientific and technological developments on the right to education and culture. 24/

111. In paragraph 3 of the Statement referred to in paragraph 4 above, the Group in effect advocated a harmonizing of the teaching of science and that of other subjects. It maintained that a thorough revision of education at all levels was required to bring about a sufficient harmony of science and technology with other human activities. Science and technology must be taught in the context of the ascent of Man, not primarily as potential contributors to the disruption of society or the depersonalization of individual lives. A proper understanding of science and its impact on society was essential for dealing adequately with the evolving problems of civilization.

22/ E/CN.4/1144 and E/CN.4/1196.

23/ A/9227 and E/CN.4/1083, Annex.

24/ ST/TAO/HR/45, paras. 54-61.

112. One member of the Group maintained that perhaps the real issue is not that intellectual advance is opposed to scientific progress, but that some people suspect an intellectual élite of scientists and scholars cut off from the mass of citizens, who remain relatively ignorant of science. Ninety per cent of the people in developing countries were in this category.

113. The Group agreed that one of the functions of any national machinery on technology assessment 25/ should be the broad dissemination of information in popular form for the creation of public awareness of the issues considered and pronouncements made by such machinery. Their reports should be made public and not be addressed simply to governments or legislatures. The Group also agreed that a function of any international machinery for technology assessment 26/ was the world-wide dissemination of information to all persons, in order to create a global awareness that the issues involved in this area supersede individual or national self-interest.

114. In this connexion it is relevant to mention, as did one of the expert contributors to the present study, the thesis of Lord Snow that a fully educated modern man should have some understanding of both concepts such as complementarity, entropy and the double helix and the great works of literature, art, music, history and philosophy. 27/ The same contributor continues:

"Informed discussion of problems of science and technology is inhibited through the low level of understanding of problems of science and technology among a large proportion of ordinary people in western society. There is a big gulf between the scientist and even the educated layman ... Part of the responsibility must be borne by scientists themselves. They are often so carried away with the excitement of their work that they do not find the time or opportunity to explain what they are trying to do and why, to the general public. Scientific research today is an expensive activity, paid for largely by the public exchequer. Scientists have a responsibility to present their work at a level which can be grasped by a popular audience.

Many of the problems of science and technology ... require political decisions. In a democratic society the decision should be taken following informed popular discussion. Such an informed discussion requires sufficient basic scientific knowledge among the participants to ensure that the significance of the various alternatives are properly understood.

Much ignorance and misunderstanding still exist among the general public in many countries concerning the nature of science and the scientific method; about the direction and implications of new scientific discoveries and about the benefits and risks associated with the exploitation of new technologies. Scientists and engineers have a social duty to popularize and keep the public informed about their work and its likely implications. The place of science in the education system is still unsatisfactory in many countries and has not

25/ See paras.170-188 below.

26/ See paras.213-230 below.

27/ C.P. Snow, The Two Cultures and a Second Look, Cambridge University Press (1964).

led to the acceptance of science as part of the general culture. Attention is needed to the development of post-experience courses, retraining courses, education for proper use of leisure time and to the acceptance of the concept of life-long education to prepare for life in the type of society the development of science and technology is making possible."

115. UNESCO has suggested the following solutions:

"37... [T]he international community might campaign to encourage States to allocate a certain percentage of the funds set aside for research programmes to social science studies on the socio-cultural conditions and aspects of the uses to which science and technology are put and to keep the general public regularly informed of the progress of research and its implications so that the public can discuss them from the social and moral point of view.

"38... [T]he training of scientists, engineers and technicians should be broadened. At present, their ethical and aesthetic education is, if not totally non-existent, at least very exiguous. Although the introduction of ethical training does not raise any particular problems, it may be wondered how the requirements of aesthetics are to be reconciled with technological requirements based, as is the case in our industrial societies, on largely utilitarian considerations. The effort must, however, be made, if only to offset this same excessive utilitarianism. The equilibrium of the scientist as a human being is at stake; and, after all, the pursuit of truth requires a dedication no less "gratuitous" than that which animates the veneration of beauty."28/

116. An expert contributor has written that:

"There has been ... a tremendous upsurge in crime in some countries, new religious and racial conflicts break out, the wars of our century have devastated many parts of the world and the co-existence between the individual and social groups has not improved in comparison with previous ages. We must admit, although without becoming pessimistic, that the moral advancement of humanity does not keep pace with the development of science and technology or with the educational and cultural progress of society.

...

... [T]he extreme disproportion between technological abilities of man and his moral and spiritual indolence may be detrimental if not altogether fatal to humanity.

...

"The deep discrepancy between the achievements of science and technology and the developing industry on the one hand and the moral side of human life on the other not only requires a counteraction by means of improving education and mass culture but also creates the need to humanize science and technology.

"Growing specialization in science and technology of their creators should be accompanied by education in humanities and social attitude to

production processes on the part of specialists, engineers and technicians. The experience of Poland and other socialist countries in this field proves the absolute necessity to educate the students of technical colleges and faculties in such a way that beside the indispensable professional knowledge they also acquire the knowledge of basic social-political problems, psychology and even, to some extent, history. It is not only the question of information but also of inculcating in the young generation of engineers and technicians a wide humanistic approach to the social phenomena and processes around them.

...

"The balance between the material-technological development of humanity, and its moral and intellectual advancement can be achieved only if the infiltration of technology into the spiritual life of man is accompanied by humanization of technological and scientific research and of the specialists in this field".

117. Writing in 1973 the Director-General of UNESCO said the following as regards the democratization of culture:

"35... [W]hen the individual is depersonalized by the scientific and technological rationalization of labour and by the standardization of living conditions, culture offers each of us the means of recovering his identity and his capacity for creation and expression. When the new media of mass communication subject the individual to a stream of undifferentiated information and turn him into a passive spectator, culture offers each of us the means of finding his own place in the world, appreciating what is happening, and reacting. When the pressure to consume turns the individual into a conditioned being, culture offers each of us the means of choosing, of refusing any form of subjection, of preferring reflection to reflexes. When urbanization cuts off the individual from his roots and traditions, culture means being able to re-establish links with his own particular inheritance, while gaining access to the cultural heritage of all mankind. Lastly, when man asks himself what he is doing on earth, culture can give him guidance in seeking a reply.

"36. From this standpoint, there is no longer any room for an élitist conception of culture. Just as culture cannot be reduced to moments of delight, it cannot be the prerogative of a privileged minority.

...

"39. Democratization of culture is a corollary, or rather a primary aspect, of the concept of cultural development. Such development is in fact based on recognition of the right to participate in cultural life as a basic human right, and its sole purpose is to promote and facilitate the effective exercise of this right in the most propitious conditions. This right was first set forth in Article 27 of the Universal Declaration of Human Rights, ...

"41. As soon as access to cultural life or, better still, participation therein, is recognized as a human right to which every member of an organized community can lay claim, it necessarily follows that the authorities of that

community are in duty bound to do all they can to create conditions conducive to the effective exercise of that right. The promotion of the nation's cultural life is thus one of the functions of a modern State. ... Governments confronted with problems of justice -- that is, of the satisfaction of human rights -- which are at the same time mass problems, involving considerations of resources and organization on an enormous scale, must have a cultural policy in the same way as they have an economic policy, a social policy, a fiscal policy, an education policy, a science policy, etc.

...

"43. Let there be no mistake, however. I certainly do not mean that the State should determine the content of culture, or pronounce on the value of the various forms it takes and the products in which it is expressed, and still less that it should determine the direction of creative efforts or even impose constraints on them ... Cultural life calls for freedom of investigation, of criticism, of invention, of expression, of communication. And if we broaden the functions of government to include cultural development, it is not in order to make the spontaneity of culture subservient to the requirements of the State. On the contrary, it is to bring the tremendous resources and omnipresent power of the State into the service of the dynamics of cultural development and the widest possible participation of the people in its achievements. A cultural policy worthy of the name does not consist in manufacturing a State culture, but rather in promoting the full development of the cultural values and aspirations of the community, in all their fruitful diversity, as a basis for State action in all spheres." 29/

118. The Director General of UNESCO added the following reflection on the relationship between culture and man's environment. 30/

"60... [T]he deterioration of the natural environment and, even more, the alienation from this environment of an increasingly large number of people in the industrialized countries are direct and potentially very serious blows to culture itself. What idea can man form of purity unless he initially receives a spontaneous impression of purity from the air he breathes, the river where he bathes, the sky on which he gazes or from all that goes to make up his life at its most instinctive? What secrets can he hear murmured within him if silence without is denied to him? How can he meditate amid tumult? How can he find himself in the continual flux of movement without pattern? And to what discoveries can he direct his steps outside himself, what marvels can he look for in a world where so many animal species are vanishing, where plant life is retreating further and further from our dwellings, and where man is increasingly confronted with the products and the signs of his oppressive presence?" 31/

29/ Document A/9227, Part A, paras.35-43.

30/ Concerning human rights and the human environment, see further paras.123-130 below.

31/ Document A/9227, Part A, para.60.

9. The contribution of the Government of the Union of Soviet Socialist Republics to the present report contains a number of references to the rights of authors and the encouragement of creativity, including the following:

"Scientific and technological progress reinforces public demand for mass education and higher cultural standards, and greatly increases the technical possibilities of satisfying this demand (mass printing and reproduction methods, cinemas, television, tape-recordings, etc.). In the USSR, the requirement that knowledge and cultural wealth should be accessible to all does not run counter to the interests of authors of literary, scientific and artistic works or of organizations that publish, reproduce or broadcast such works or use them in other ways. Soviet user organizations do not seek to obtain profits. Although publishing houses, theatres and cinemas operate on a self-supporting (profit-and-loss) basis, their commercial operation is based on prices fixed or limited by the State; publishing houses and theatres working in national languages spoken in limited areas receive appropriate financial assistance. All this makes it possible to maintain low prices, within the reach of all sectors of the population, for books, particularly textbooks, theatre and cinema tickets and gramophone records. This policy and practice is one of the major factors which have led to the elimination, in an extremely brief historical period, of the cultural backwardness inherited from Tsarist Russia, particularly among the small nationalities in a multinational country, many of which did not even have their own writing before the revolution.

At the same time, Soviet copyright laws fully protect authors' personal and property rights as the use of works is increased by new technology. Based as it is on combining the interests of authors and the public, Soviet legislation facilitates the mass dissemination of works by new technological methods. For example, once a work has been published, the author's consent is not required for its use in films, radio and television programmes, newspapers, recordings or public performances. This does not, however, apply to the alteration of a work or its translation (except of newspapers). The right to a fee is maintained in certain cases (public performance, release of recordings), the appropriate rates being fixed by the State. In other cases, particularly that of radio and television, authors are rewarded by the increase in the popularity of the work, the size of the audience it reaches and the frequency with which it is performed.

The system of standard authors' fees operates for practically any form of use in the USSR, including publication, which ensures a guaranteed and high return for creative work.

In an effort to expand cultural co-operation with all countries, the Soviet Union in 1973 acceded to the Universal Copyright Convention, the provisions of which help to increase international exchanges of creative works.

...

Soviet law is also based on the premise that technological progress and the flow of technological suggestions depend on the level of creative interest among the broad mass of workers. This creativity is stimulated by applying the principle of moral and material incentives. Thus, the originators of suggestions are alone entitled to special moral and material rewards, which are not transferable and inalienable. Moral incentives include the right of authorship, the right to confer the author's name, or a special designation chosen by him on the invention, and entitlement to a special badge. Inventors and rationalizers are granted certain other rights and privileges. Outstanding inventors and rationalizers are awarded honours by the State. The principal material incentive is the right to receive remuneration, the amount depending on the usefulness of the invention or suggested rationalization to the community. 32/

32/ Information furnished by the Government of the USSR on 29 August 1975.

VI. SOME SPECIFIC PROBLEMS ARISING FROM SCIENTIFIC
AND TECHNOLOGICAL DEVELOPMENTS

1. Respect for the integrity of nations in the light of advances
in recording and other techniques

120. A report on respect for the integrity of nations in the light of advances in recording and other techniques has been produced by the Secretary-General.^{1/} During the debate in the Third Committee of the General Assembly on the question whether such a study should be made, some representatives pointed out that young nations "recognized the dangers to which contemporary science could expose their culture and they wanted to retain their traditional values"; and that the uncontrolled use of the new devices and techniques to which progress gave rise was "a specially serious threat for developing countries, which were defenceless against them". Other delegations held that the concept of "national privacy" had no connexion with individual privacy and that photographic or any other type of espionage between nations had nothing to do with human rights. In reply it was argued that the protection of the State against "foreign interference of a technical kind" was a subject which directly related to human rights and that it would be difficult to safeguard the human rights of a people if they were not protected from external interference.^{2/} During a later debate, the view was expressed that, at the international level, the activities of spy rings were often based on the use of sophisticated inventions, which violated the principles of international law and constituted a threat to international peace and security.^{3/}

121. In the Secretary-General's report, particular attention was paid in this connexion to the implications of the development of observation satellites and communications satellites, including the possible effects of future direct broadcasting by satellite.

122. The Director-General of UNESCO has drawn attention to the fact that, as a result of the development of electronic telecommunications, including the advent of telecommunication by satellite, national frontiers, even those which are subject to the strictest political or economic controls, have ceased to be closed to the influence of foreign cultures. These technical opportunities for unrestricted intrusion, for ill as well as for good, place the dominant national cultures of all countries in the same situation as that in which the minority cultures of these countries find themselves with regard to the dominant cultures. He saw a movement taking shape with the object of finding, within a system of ideas and practices adopted by the international community, principles to regulate flows and exchanges of information which, besides ensuring the fruitfulness of intercultural contacts, will guarantee the preservation of cultural diversity.^{4/}

^{1/} E/CN.4/1116/Add.3 and Add.3/Corr.1. See also E/CN.4/1142/Add.2, paras.52-53.

^{2/} Ibid, para.1.

^{3/} A/C.3/SR.2137.

^{4/} A/9227, para.24. See also the information supplied by UNESCO which appears in section II (a) of the Annex to doc. E/CN.4/1083 and in doc. E/CN.4/1144, para.56.

2. Deterioration of the human environment

123. The deterioration of the human environment due to scientific and technological developments has been a by-product, until recently generally regarded as inevitable, of the interference with the environment which was necessary for the realization of the right of everyone to "a standard of living adequate for the health and well-being of himself and his family", laid down in article 25 (1) of the Universal Declaration of Human Rights. The threat to human rights of this deterioration is now, however, causing increasing concern in many sectors of society, especially in some of the more populous countries. This problem is the more serious because the harmful environmental by-products of certain technological developments are often unpredictable and because the developments are so rapid. It is relevant to the present study because the deterioration in the environment (i) is a threat to the right to life, which is proclaimed in article 3 of the Universal Declaration of Human Rights, (ii) infringes article 25 (1) of the same Declaration, according to which, "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food" and (iii) reduces the enjoyment of living of millions, the right to which is implied in the reference to an adequate standard of living which appears in article 25 (1) of the Declaration and in the mention of the dignity and worth of the human person which appears in the preamble to that instrument.

124. The following is a summary of some relevant aspects of the deterioration of the human environment:

- (i) A threat to health and even life is posed by the pollution of the air due to industrial activity, traffic, domestic heating and other factors. Nuclear blasts, for whatever purposes, peaceful or otherwise, and experiments with biological and chemical methods of warfare also create hazards to health and life;
- (ii) Psychological and physical damage and a general deterioration in living comfort are caused by the increase of noise in the urban environment; causes of this include increased air traffic, supersonic travel with the accompanying supersonic boom, increased street traffic and demolition and construction activities;
- (iii) A threat to health, to the enjoyment of the amenities of life and to the continued supply of essential raw materials is posed by excessive waste creation and inefficient waste disposal, including the dangers arising in connexion with the disposal of the wastes of nuclear power sources.
- (iv) There are various threats to the world food supply which also entail in some measure an impairment of mankind's more general enjoyment of the amenities of life, including the visual beauty of the landscape. These include erosion and other forms of soil deterioration; water pollution by domestic sewage, industrial wastes, drained-off chemical fertilizers and pesticides and thermal pollution; other harmful secondary effects of pesticides, other biocides, chemical fertilizers and synthetic detergents; and increased danger of oil pollution of shores due to off-shore oil drilling and the use of larger oil tankers, which do great damage in case of wreck. There is a penetration of poisonous substances into food chains. In addition, FAO writes in its contribution to the present report that "technologies applied with seeming impunity by a few, have sometimes become a threat to ecological systems on which man depends when applied widely and

without proper controls and consideration of the needs of all. Examples are ... (2) lowering of water tables and salt-water incursion into fresh water aquifers from uncontrolled exploitation of ground-water; ... and (5) creation of uncontrolled watering points in semi-arid areas leading to permanent deterioration of grazing lands from overuse".

125. Some of these hazards affect in some measure the whole of humanity. Others are essentially problems of urban living. Increasing population and accelerating urbanization exacerbate many of the dangers referred to. In addition, attention has been drawn to the individual's possible loss of identity in huge cities and conurbations and to the threats to his psychological stability due to overcrowding there.

126. One member of the Group drew attention to the time factor in fighting environmental deterioration. Pollution of the earth's fresh water resources, for example, was to a considerable extent reversible, but it must be confronted in good time. Destruction of the ozone layer in the atmosphere was irreversible. The growing danger of rendering extinct certain species of animals, which was to a considerable extent due to technological advances, should be fought, in the interests of the balance of nature and the richness of man's cultural inheritance.

127. One expert contributor drew attention to another view, by quoting the words of Mrs. Indira Gandhi at the United Nations Environmental Conference in Stockholm in 1972: "The rich countries may look upon development as the cause of environmental destruction, but to us it is one of the primary means of improving the environment for living, of providing food, water, sanitation and shelter, of making the deserts green and the mountains habitable".

128. References were made to the international character of environmental problems, both by members of the Group and by expert contributors. One of the latter writes that: "Previous generations have faced problems of pollution and material shortages but they were local problems. The problems of our time differ in their scale. Pollution of the air in Britain and Western Europe affects large areas of Scandinavia. Pollution of the Rhine in Germany is passed on to Holland ...". Another expert contributor draws attention to the Final Act of the European Conference on Security and Co-operation, signed in Helsinki on 1 August 1975, which affirms in a preambular statement that "the protection and improvement of the environment, as well as the protection of nature and the rational utilization of its resources in the interests of present and future generations, is one of the tasks of major importance to the well-being of peoples and the economic development of all countries, and that many environmental problems, particularly in Europe can be solved effectively only through close international co-operation"; and that "experience has shown that economic development and technological progress must be compatible with protection of the environment and the preservation of historical and cultural values; that damage to the environment is best avoided by preventive measures; and that the ecological balance must be preserved in the exploitation and management of natural resources."5/

5/ Conference on Security and Co-operation in Europe, Final Act,
document CSCE/CC/64, p.54.

129. A United Nations Conference on the Human Environment was held in Stockholm on 5-16 June 1972. It adopted a Declaration, an Action Plan and several resolutions.^{6/} In implementation of a resolution on institutional and financial arrangements and of General Assembly resolution 3004 (XXVII), the Secretariat of the United Nations Environment Programme, with continuing functions, has been established in Nairobi, Kenya.^{7/}

130. Other international measures, including international agreements, and national measures, to meet environmental problems are described in the Secretary-General's report on protection of broad sectors of the population against social and material inequalities, as well as other harmful effects which might arise from the use of scientific and technological developments.^{8/}

3. The population explosion

131. The world is witnessing an explosive increase in population that is giving rise to increasing problems in relation to adequacy of food supplies, living space and economic resources in general, as well as of educational and social services. According to some specialists, the overcrowding in cities, which is in part one result of the population explosion, is causing an increase in psychological disorders. The problems created by the population explosion are a by-product of the wider enjoyment of health, including the declining death rate of people before reaching the age of procreation.

132. National and international action in this field has been summarized in the Secretary-General's report on protection of broad sectors of the population against social and material inequalities, as well as other harmful effects which might arise from the use of scientific and technological developments.^{9/} A recent development has been the adoption of a World Population Plan of Action by the World Population Conference, Bucharest, 19-30 August 1974.^{10/} The Plan was affirmed by the General Assembly in resolution 3344 (XXIX) of 17 December 1974.

133. Specifically in connexion with the population explosion, a very delicate question has been raised: "Is it justifiable to keep on trying to salvage, at great cost, more and more victims of chronic and irremediable diseases? Perhaps the doctor standing in a personal and emotional relationship to individual patients is not the right person to supply the answer".^{11/} The Group discussed a related, but broader problem. It was said that if the lives of everyone in a population were extended for ten years - from 70 years of age on the average to 80 years of age -

^{6/} See A/CONF.48/14/Rev.1 (United Nations Publication, Sales No.73.II.A.14), Part One.

^{7/} See Report of the Secretary-General on the Work of the Organization, 16 June 1973-15 June 1974 (doc. A/9601), pp.95-97.

^{8/} See doc. A/10146, paras.124-142.

^{9/} A/10146, paras.143-155.

^{10/} E/5585, Part One, section I.

^{11/} Sir John Bruce, Regius Professor of Surgery at the University of Edinburgh, quoted in doc. E/CN.4/1028/Add.3, para.333.

this would be equivalent to multiplying the total size of the population by one eighth. If a population had already reached or exceeded the optimum level for adjustment at its present technological level to its resources, or if a country was trying to maintain its population without increases, then a choice must be made between extending the life of older people and having more babies, because either one of these actions increases the population. Had the question been sufficiently considered whether it is more desirable for a particular population or country to have more older people or to have more babies? The time was approaching when the choice would have to be made. A choice in favour of limiting births would conflict with Article 16, paragraph 1, of the Universal Declaration.^{12/} Moreover, the extension of life of persons beyond the age of ordinary retirement from active service in society did not add to the productivity or the leadership of that society. It represented an economic burden that can only be supported readily if the society has a surplus of goods and services. Again, it was maintained that in general the older persons in society, in positions of power and prestige, exert a conservative force militating against change in society. It would be very desirable if research on ageing was directed not simply to extending life, but to the maintenance of the vigour of body and mind, which would enable persons to remain as happy and productive members of society; but very little attention seemed to be given at the present time to this question and there seemed to be little success in that area. Elderly people may be less able to cope with swift technological developments. In a more general framework, it was argued that, in view of the inevitability of death, which is a part of the biological pattern of life in a sexually reproducing species, there must be an evolutionary balance between the length of the life span and its value to the survival of the species. Generally speaking, the continuation in any species of a longer and longer life span beyond the age of active reproduction is contra-evolutionary and, in biological terms, it is only advantageous to a species if in some way that lengthening of life promotes the general successful adaptation of the species to its environment. On the other hand, it was pointed out that old people had a right to life and that many continued to contribute to the life of the community, not least by making available to it their longer experience and by providing leadership.

134. A member of the Group said that, already in some parts of the world, especially Africa, whole populations were under-fed and lacked the protein which is the most important food element. Yet it was well known that, if people have not sufficient food, they breed at increased rates; so matters get worse. Because of this, in some parts of Africa the expectation of life was 30 or 40 years. Furthermore, if children are under-supplied with protein, their brain development is affected adversely. When grown up, they are not able to support the culture and the development of their country, which will consequently remain underdeveloped. It was important to increase supplies of protein. The "Green Revolution" had not proved a solution to undernourishment. Oil could supply protein, but was itself not unlimited. The plankton in the oceans offered a virtually inexhaustible source of protein. Yet the problem of available space on earth remained.

135. It was maintained that in newly independent countries it was suspected that the urging of policies for limiting population constituted a new form of colonialism. Furthermore, it was pointed out that population control is disliked by some people

^{12/} See para.72 above.

in the developing countries, since in many of these countries children represent both manpower (in the absence of labour-saving machinery) and social security for parents in their old age. This was recognized as being an argument in favour of the transfer of technology and of the expansion of social security schemes.

136. It was agreed by the Group that the United Nations family should study further the question of the population explosion, in the light of the work of the Bucharest Conference of 1974 and of the World Conference of the International Women's Year, Mexico City, 19 June-2 July 1975.^{13/}

4. Increasing destructive power of modern weapons

137. Modern science and technology are recognized as having rendered possible vast suffering and perhaps even the annihilation of the human race through the destructive power of modern weapons. This poses a threat to all human rights. It may cause the death of non-combatants and suffering which may last many years, and may even cause physical harm to unborn children by contaminating their future parents.^{14/} The reference to harm to unborn children has atomic weapons in particular in mind. Apart from the possible use of such weapons in warfare, atomic radiation poses hazards to mankind, as is mentioned in paragraphs 141-146 below.

138. A particular reference should also be made to the report of the Secretary-General, Chemical and bacteriological (biological) weapons and the effects of their possible use (United Nations publication, Sales No.: E.69.I.24), which describes, inter alia, the short-term and long-term effects upon man of the use of such weapons. The dangers of such weapons are receiving widespread discussion. It is sometimes claimed that the mere manufacture, storage and transport of such weapons are a threat to health and life, in view of their highly toxic effects in the event of accident.

139. A number of treaties aimed at prohibiting the development and use of weapons of mass destruction are described in the Secretary-General's report on protection of broad sectors of the population against social and material inequalities, as well as other harmful effects which might arise from the use of scientific and technological developments.^{15/} The Group placed strong emphasis on the prohibition of weapons of mass destruction, and wished to draw special attention to some of the international instruments already directed to achieving that end which were referred to in the report just mentioned. The Antarctic Treaty of 1959 had prohibited testing of any type of weapons, any nuclear explosions and the disposal of radio-active waste on the southern continent. In 1963, the threat of world-wide radio-active contamination from atomic bomb testing led to the signing of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water. This was followed in 1964 by the Treaty for the Prohibition of Nuclear Weapons in Latin America, which was signed by 21 Latin American countries at

^{13/} The report of the World Conference appears in document E/CONF.66/34.

^{14/} Cf. doc. E/CN.4/1028/Add.3, para.334.

^{15/} See doc. A/10146, paras.156-171

Tlatelolco, Mexico. The Contracting Parties undertook, among other obligations, to prohibit and prevent in their respective territories: (a) the testing, use, manufacture, production or acquisition by any means whatsoever of any nuclear weapons, directly or indirectly, and (b) the receipt, storage, installation, deployment and any form of possession of any nuclear weapons directly or indirectly. The Treaty of 1968 on the Non-Proliferation of Nuclear Weapons and the Treaty of 1971 on the Prohibition of Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and the Subsoil Thereof contained important provisions aimed at the prevention of the spread of nuclear weapons. To the aforementioned treaties should be added the Convention of 1971 on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, whereby the signatories undertake not to develop, produce, stockpile or otherwise acquire or retain microbial or other biological agents or toxins except for specific peaceful purposes, or weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict. The General Assembly adopted in 1972 resolution 2936 (XXVIII) declaring on behalf of Member States their renunciation of the use or threat of force and the permanent prohibition of the use of nuclear weapons; it also recommended that the Security Council should take appropriate measures for the full implementation of that declaration.

140. An expert contributor writes "Throughout the whole of recorded history arms races have led to war. Never previously has the world seen an arms race on the scale of the present one. Never previously have the likely consequences of full-scale war been so terrible. These are the problems and there is no doubt that their magnitude is directly related to the development of science and technology and its application".

5. Hazards arising from atomic radiation

141. In resolution 3226 (XXIX) of 12 November 1974 and in many previous resolutions, the General Assembly has expressed its concern about "the potentially harmful effects to present and future generations resulting from the level of radiation to which man is exposed".

142. A considerable literature exists, emanating from both inside and outside the United Nations system, on the hazards arising from atomic radiation. The United Nations Scientific Committee on the Effects of Atomic Radiation, for instance, submitted reports to the General Assembly in 1958, 1962, 1964, 1966, 1969-1972 and 1974.^{16/} Attention has also been drawn to the interest of the ILO ^{17/} and WHO ^{18/} in the protection of workers against ionizing radiations and in radiation health, respectively.

^{16/} Official Records of the General Assembly, Thirteenth Session, Supplement, No.17; Seventeenth Session, Supplement No. 16; Nineteenth Session, Supplement No.14; Twenty-first Session, Supplement No.14; Twenty-fourth Session, Supplement No.13; and docs. A/8078, A/8334, A/8725 and Corr.1 and A/9632.

^{17/} See docs. E/CN.4/1028/Add.3/Corr.1, para. 338 and E/CN.4/1028/Add.6, para.56.

^{18/} See doc. E/CN.4/1028/Add.3/Corr.1, para.338.

143. International and national safeguards against hazards arising out of atomic radiation are described in the Secretary-General's report on protection of broad sectors of the population against social and material inequalities, as well as other harmful effects which might arise from the use of scientific and technological developments.^{19/}

144. One member of the Group, however, thought that the existing relevant treaties were rather weak. Atomic power stations were spread over the world, and plutonium would soon be accessible in all countries. It was very difficult to control the use of plutonium. Perhaps the existing treaties would put a brake on the developing countries; but eventually other means of control would have to be provided.

145. Another member of the Group pointed out that the hazards of atomic radiation interfered with human rights on an international scale. As the number of nuclear power plants, depending upon fission, increased throughout the world, the problem was what to do with accumulating high-level radio-active wastes. Very little effective work had been done to solve the problem of waste disposal in a way that will not potentially contaminate the seas and the oceans, as well as local areas of a country. If wastes accumulated and they were not properly guarded, they would spread and cause harm to other peoples. Furthermore, safety measures in nuclear power plants had been continually improved, so that the possibility of a nuclear accident involving widespread dispersal of radio-active gases from an accident at a nuclear plant had been reduced to a very small risk. For every accident that has ever occurred at a nuclear power plant in operation, however, there had been dozens of accidents in the transportation of fuels to plants or of wastes from plants, or due to leakages that develop in the storage of highly radio-active materials. It was difficult to confine these risks within the bounds of a single nation.

146. Another member of the Group felt that disposal of radio-active wastes by sending them into space would be too hazardous to attempt, in view of the possibility of accidental malfunction of the missiles used. He added that nuclear fusion (as opposed to fission), if it could be developed, as a source of power, would be much safer.

^{19/} See doc. A/10146, paras.172-179.