

International Summer School on Disarmament
and Arms Control: Seminario. Frascati
13 - 24 giugno 1966

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ARMAMENTS

Prof. R. Bjornerstedt

Tuesday, June 14, 1966 - 16:00

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In view of what has already been said in previous lectures, my treatment of the subject of armaments will not be comprehensive. Instead I will try to take up some new points, and to enlarge on some of the points that have been brought up before.

The military establishment is among the most conservative you can find inside society. It is conservative from the point of view that it is resistant to change. In talking about armament and the disarmament process it is therefore important to consider the military establishment, the people inside the military establishment, the way they think about the disarmament process and the way they think when they want to acquire new armaments. In this basic approach to the problem you consider the armaments process to be a consequence of the existence of a military establishment. This is not the only relevant approach, but to my way of thinking it is unrealistic to discuss disarmament if one does not take into account different ways to overcome the resistance that exists inside military establishments. I will come back to this point but first I will turn to some of the more specific aspects of armaments and start with the question of nuclear weapons and testing, and the relative usefulness of different kinds of test bans.

When it comes to the usefulness of a test ban there are three different ways, in principle, in which one could test nuclear weapons. They will be enumerated in their order of increasing amount of the information they will give to the party testing these weapons.

The first way, is through physical, non-destructive measurements and theoretical calculations using computers and the usual principles of fast neutron technology, trying to compute what the efficiency of a particular device would be and putting this to the test with non-destructive physical measurements. This will give some information about the nuclear warhead. The next type, the underground test, will give more information. It is a performance test. test in the open air finally will give an opportunity to observe also effects of the weapon.

Considering now the usefulness of continued testing, let us first look at the effects of nuclear weapons. These effects have been studied for a number of years and it is perhaps astonishing that after these many years there are still effects that are not fully understood and fully known. Maybe it is significant that Professor Stonier in his opening lecture did not mention two effects which are still not properly understood.

One is the ground shock effect of nuclear weapons exploding in the ground surface of the underground. This is important when using nuclear weapons to destroy hard targets, like missile silos and underground shelters.

The second phenomenon called EMP which is short for Electro-Magnetic Pulse, and describes the fact that the explosion of a nuclear weapon does create a pulse of electromagnetic radiation that is powerful enough to seriously disturb radio- and tele- communications over a wide area. Although the military importance of this effect is quite significant, it has been forgotten for a number of years, but is now rediscovered. Today EMP is a serious worry to the military establishments around the world (those establishments that do worry about the effects of nuclear weapons).

From the point of view of weapon effects, underground tests would be of some usefulness, but tests in the open air would be of more interest especially for the study of the EMP effect.

Another reason for nuclear weapons' tests is to make performance tests for the development of new nuclear weapons. A test program is desirable in connection with weapon development to check and indicate whether the efforts made, do pay off in terms of better performance. Closely related to this, is the need for design control of the finished weapon. A weapon that is designed to be, e.g., 20 Kton in explosive power may perhaps at one time yield 15 kton, at another, 30 Kton. This may be important in terms of the operational usefulness of the weapon. It is therefore desirable to have some reassurance about this characteristic (and other) of the weapon design.

Finally, a development program is concerned not just with the warhead but with the entire weapon system. The warhead and the weapon carrier have to match. These objectives could be met through carrying out underground tests. To some extent non-destructive testing could be a useful substitute.

To sum up: in renouncing or in giving up the opportunity of using open air tests; the great powers have already given up something in terms of possibilities for increased knowledge about weapon effects and in terms of more efficient weapon development. The non-nuclear powers, at least at present, have given up the same option to an even larger extent, especially if they are in the beginning of or considering the possibility of a weapons development process.

Giving up underground testing, would seriously hamper the further development of nuclear weapons by the nuclear powers. To non-nuclear nations the same action would not pre-

vent the design of crude bombs, but it would mean an effective stop sign on the road towards an efficient and varied nuclear arsenal. When looking into the future, however, the possibilities of the method of non-destructive testing and theoretical calculations may gradually improve. In ten years, it would perhaps not matter so much as now, if there is the option of making an explosive test or not. The main reason for an explosive test may then be the desire on the part of the military to see that the devices developed by the scientists do really work. This may not be an absolute hindrance to the conclusion of a complete test ban.

Finally, the possibilities of clandestine testing should be remembered in this connection. It seems that the technical development of the last few years has meant improved possibilities for concealed weapons tests in the kiloton range.

The present nuclear weapons arsenals have been developed among two separate lines, towards the tactical, kiloton weapons and the strategic megaton weapons. This trend of the development seems to be rather permanent. There has been talk about the possibility of manufacturing small thermonuclear bombs that contain no fissile material (not even to trigger the explosion) and that this could constitute a technical breakthrough opening up possibilities for just about everyone to acquire cheap nuclear weapons in a short time. My personal evaluation of this possibility is that, if it exists, it is still many years off. Could such a development be realized, it would revolutionize not only weapons technology, but also the prospects for peaceful use of fusion energy.

What is required of a non-nuclear nation that wishes to develop nuclear weapons? Several interpretations may be given. According to one of them, only one test is needed which is noticed all over the world. This makes you "nuclear" and gives most of the political prestige that may have been sought. This attitude towards the problem has been prevalent during many years of the nuclear age but is now becoming less acceptable as it is being realized that there is more to "going nuclear" than just carrying out a first test.

There are three principal requirements that one should ask of the nation that is going nuclear. The first is that the arsenal of weapons that is developed must be versatile and substantial in number if it is going to have any importance whatsoever as a nuclear deterrent against a major power. Against a non-nuclear state this requirement is, of course, less stringent

at first, but the chances are that if nuclear weapons are needed to deter a non-nuclear state, this state will make every effort to secure guarantees from a major power or start on its own weapon program. This is perhaps the beginning of a nuclear arms race.

The second requirement concerns an adequate delivery system, and here again it has not been widely realized that this part of the development in the long run may take just about as much effort and resources as the first step, the development of a nuclear arsenal. This has been demonstrated with clarity by the British experience where several projected and partly developed delivery systems have had to be scrapped as being obsolete. The initial expectation was that the task of making these delivery vehicles would be technically rather straight-forward. One important aspect of the delivery problem is the question of target identification versus vulnerability. In the "game of deterrence", the nuclear weapons of one state are the targets to be attacked by the adversary. If this state has recourse to good facilities for reconnaissance, this means that the nuclear system will have to be protected against a first strike to make the deterrence credible and reasonably stable. To provide the protection is a very costly task, comparable with the price for the warheads.

Once a state is able to deploy nuclear weapons in a "credible" way, the concern arises that these weapons are not to be used in a way that is not in correspondence with the intentions of the political and military leadership. To make certain this requirement for command and control, takes another effort and the third or fourth time, it is an effort that in terms of money, resources etc., is of about the same magnitude as getting the nuclear arsenal. Consider, for example, the recent news item that six French Mirage 4 due to navigation difficulties were lost in Spain; they could not find their way to an airport and had to be abandoned by the pilots. From the point of view of command and control, this could perhaps be termed nuclear tourism. It is an example of the practical difficulties that meet if one all the time must be aware of where the nuclear forces are, where you can use them etc. There must be on these weapons navigational locks which will make sure that they can be used only within areas that have been determined by the political (and perhaps military) authorities. There could be need for timelocks safeguarding that a weapon could be used only within a predetermined time period. There should be duplicate (triplicate) safeguard systems for the firing as well as rules regarding what should happen if the delivery vehicle was destroyed or damaged.

In conclusion, the task of becoming nuclear may put a heavy burden on the economy of a nation. This is especially true if the nuclear capacity is to be something more than a political showpiece. And if it is only that, the present development points to a growing realization of the futility of acquiring a nuclear arsenal that is not credible in a military sense.

May I now turn to a short discussion of the problem of antiballistic missiles, ABM. In this connection one may also include some comments on civil defence, especially some of the projects in the United States to acquire what may be called a "super-civil-defence". An ABM system is supposed to destroy the ballistic missiles that are coming against either your own missiles or your other possible targets. A "super-civil-defence" is a civil defence that is strong enough to influence the balance of deterrence. It should be so strong that it could reduce appreciably the damage potential of the aggressor's arsenal, to give an example it should be able to reduce the damage from say 90% to 30%. Two such systems discussed in the United States are the "Low Casualty Program" (developed by the Hudson Institute) and "Project Harbor" (Oak Ridge). Both these projects are based on very strong shelter systems and constitute multi-billion dollar programs.

Both ABM and super-civil-defence have damage limitation as their objective. Taking the ABM first it is of course possible, technically and scientifically, to construct ABM systems that will have a chance of shooting down ballistic missiles that are coming in. But this is only part of the story, as then one has to ask the attacker what his counter avoidance tactic would be in this connection and what technical possibilities are open to him. One then finds that there are e.g., techniques of using decoys and techniques of saturating the ABM defence, to bring the first strike in such a number against the ABM system that it does not have the time and the possibility to pick up every incoming missile; some will get through and produce the damage desired. In the competition between attacking weapons and defensive measures, the attacker has the advantage. This is also with regard to the ABM situation; the only requirement is that the attacker will have to add some additional punch to his first or second strike to make sure that it does give the result that was intended. It is a question of economy rather than of a technical breakthrough for the attacker.

The same thing can be said about the super-civil defence system. Any shelter, no matter how strong you build it, can be destroyed by a nuclear weapon, it's just a question of choosing the weapon size and the delivery system. It may be more costly for the aggressor to achieve his result with the attack, but it will still be possible if he spends the money. The cost that one party has to put into manufacturing more nuclear weapons is relatively small compared to the cost it takes to build the civil defence system. One reason for this is the problem of warning, to make people aware that an attack is pending. This is a difficult problem as it may take less than 30 minutes for an ICBM attack to reach the target. To get millions of people into shelter in such a short time is at best difficult.

Let us now consider some other aspects of the armament situation: the biological and chemical weapons. These weapons can be produced in great quantities for a cost which is very small in comparison with what is paid for nuclear weapons. Biological weapons in substantial quantity and very efficient quality can be produced in a room about the size of this lecture room (100m²). The production facilities may therefore be much smaller than Oak Ridge or other fissile material plants. The same is in general true for the production of chemical weapons.

Biological weapons have a time lag between when they are used and until the effects are observed. Chemical weapons have an immediate effect and an effect which in comparison with the chemical agents that were used during the First World War or those that were available during the Second World War is much more lethal. The lethality has been increased hundred-fold and sometimes thousandfold, when measured as the concentration needed to produce an effect. So here the armaments process has been very efficient indeed. Yet we are still in the same situation as we were in World War II and that depends upon the protection possibilities.

The problem of protection is twofold. First, there is the problem of warning, the problem of telling people that an attack has occurred. Both with B and C weapons this is at present a very difficult problem. Secondly, there is the problem of individual protection. Without going into the technical details of vaccination and inoculation against biological weapons or the use of face masks and protective clothing against chemical warfare, it may be claimed that the present situation is about the same as it was during the Second World War with regard to the use of chemical weapons. The prospective attacker

may have good reasons to be afraid that the same kind of weapons may be turned against him, should he use B and C weapons.

The conventional weapons should finally get some attention in this connection. Of course, there has been and there still is a continuing development of all different kinds of conventional weapons. This applies to everything from increased air mobility using helicopters and hoovercrafts, to an increase in efficiency of simple ordinary firearms. The importance of this development lies in the gradual increase of the financial burden of conventional armaments and the resulting difficulty, ever increasing, for the smaller nations to "keep up with the Johnsons". This may lead to gradually increasing difference, from the military point of view of the strength of small and large nations. Smaller nations may then feel tempted to increase their security through alliances or obtaining major power guarantees. The present trend, if any, is in the opposite direction, however.

Let us now consider briefly those things that one is trying to protect through the use of arms: the society, its way of life, the social development and the economic, scientific and technical development that is taking place inside the society. At the same time as the means of destruction become more and more efficient, the society especially in the developed world is rapidly becoming ever more intricate and complex and thus vulnerable to attack by less and less efficient means of destruction. Already today, less than a kilo of TNT is sufficient to deprive an entire nation of its TV program for some time (Sweden on New Years Eve 1966). The blackout that occurred in eastern United States may probably be repeated by using equally simple means, etc. One is therefore tempted to ask the question: If this type of society will develop still further and the world over in the next fifty to one hundred years, might not then the use of nuclear weapons to impress on your adversary become an unnecessarily expensive method of war? Might there not exist simpler things, like tweezers that would be efficient enough? Considering the fact that a resistance movement is efficient when it requires only a minority of the population to participate, whereas usually it is not if a majority is required; society seems to develop in a direction where it is becoming more and more vulnerable to sneak attacks and where a few people can hurt the society with great success. If so, the motives for the present armaments situation might change with the development of society. This is certainly a long term perspective, and if it is at all realistic, is doubtful until possibilities like these have been thoroughly studied. The argument has been

. given here to illustrate how little we actually know about the future society and its security needs and that the questions of arms and disarmament may undergo changes in the future, changes as radical as those introduced by the invention of nuclear weapons.

(2)

Military Decision Making

R. Bjornestedt: 15/6/1966 - 9:30

In yesterday's lecture I stated that if you start from the disarmament point of view and look at the armament problems, certainly the military establishment and the way it works, the guidelines for its thinking are very important to understand. Today's lecture takes it from there.

When it comes to strategy and strategic uses of military means the time honored interpretation of the concept of strategy has been, that strategy is a policy for arms employment, different ways to use military means in acquiring different national objectives. This does not say very much unless some definitions are added. One question is: what is a policy? A policy is a guideline for decision making, whether it is concerned with planning decisions regarding the future or operative decisions that are to have an immediate effect. A study of the concept of strategy therefore presupposes some knowledge of the way in which decisions are being made inside and above the military establishment.

At the center of decision making stands the concept of rationality. Rational operations and rational planning have never been talked of as much as during the last hundred years. These concepts have been used by the military and the politicians again and again to defend a policy. Still, as anyone can see, the result has been disastrous. We have had a great number of wars some of which have claimed millions of lives and caused untold human sufferings. The conclusion can only be that there may be something seriously wrong with the concept of rationality itself or at least, with the way it is used in practical decision making.

There are several different definitions of rationality. Let me give you one that is based on four assumptions. In a situation where a choice has to be made between different alternatives, all the different alternatives that could possibly be chosen, should first be enumerated. Secondly, for each and every alternative the possible consequences should be deduced. Thirdly, there should be a set of rules or criteria for evaluating the various consequences. And, lastly, the choice should be made through applying the set of rules to order the consequences from the best ones to the worst ones and in this way deduce what alternative might be the best one to choose in the particular situation.

Immediately it is possible to point out a number of weaknesses with the above procedure. In the first instance, practical decision making is often carried out in a situation where there is no time to attempt to be in any way comprehensive, to have time to consider all the different choices that are possible, all their consequences and to evaluate the consequences. This means that the decision situation very often reduces the possibility of being rational in the sense defined above.

Next, it is common experience that it is often impossible to foresee all consequences of a line of action. There exists genuine uncertainties about the future that affect not only the probability of a consequence, but also its intrinsic nature. Thirdly, there is a wide variety of sets of rules or criteria that can be used, yielding different results. This will be ex amplified first on the military level.

Let us consider the problem of defining a useful criterion for an adequate military defence. One possibility is to say: the military defence should be of such strength that the cost to an aggressor of overcoming this defence is too high in comparison with the advantages to be gained by the aggression. This is a criterion often used in military planning. It can, however, be defined in several different ways depending on what kinds of costs are taken. Should one consider only the cost of the military input into the aggression? Or should particular attention be given to the expected military losses? Should one count also the political costs and disadvantages that might follow with an aggression etc.? The answer will vary with the situation and is often difficult to derive as military and political costs cannot be measured in the same units. The answer must therefore be subjective, by definition. Apparently, rationality is subjective.

In defence planning every effort should also be made to consider other aspects than the purely military ones. Above the military level there is something which I would like to call the total defence level. Here one considers not only the effects of the use of military force, but also for instance the civil defence aspects and what happens to the economy, the society etc. On this level one may find that the previous choice and consequences of rational decision making might be evaluated in quite different ways. The new criterion may be to consider not just the possibilities to increase the cost to the aggressor, but also the chances of keeping the defensive costs down as much as possible. One should try to design

the defence in such a way that an aggression will not introduce serious difficulties in terms of national survival. These two classes of criteria (offensive and defensive) will often lead to quite conflicting considerations for military decision making whether it is concerned with a choice between different weapons systems or a decision as to how much money should be put into military defence, civil defence, etc. So once more there is room for a subjective choice in connection with rational decision making.

While the studies of military defence are concerned with questions of military efficiency, the total defence level has to do with the interaction of the different parts of the total defence system. The next higher level considers the national security aspects and includes, apart from the total defence, also the foreign policy and other questions of relevance to security. The farm policy of a country may, e.g., be influenced by considerations of national security.

One statement which may be used to describe national security is that it expresses the desire of a nation to decide about its own affairs whether they be political, economic, cultural or social. When the national security aspects are considered, new criteria have to be introduced. Apart from an evaluation of different total defence measures, the influence of foreign policy has to be taken into account. It is a question of adapting a national security policy to the international environment or to try to influence this environment in as favorable a manner as possible. The choice between different measures is then complicated by the very different character that some of these measures have. If, for instance, it is found that to build an adequate civil defence is something very expensive, one may have to balance against this the difficulties of foreign policy in preventing a development towards situations where a strong civil defence would be necessary. Clearly, in balancing these different aspects one is comparing entities that are incommensurate? Subjective judgement has to be applied.

National security may be said to represent an insurance that is paid to avoid outside interference. Inside the national policy of a nation the security objectives have to compete with other national needs. On the national policy level, therefore, the scope of the evaluation is broadened once more. At present there exists no method to guide a quantitative or qualitative evaluation. The solution has to be defined in political terms.

On most of these different levels the decision making will have to consider the possible developments of the international environment. One has to look into the future and answer questions like: Will the United States disengage from Europe? Will the trend towards economic integration proceed to such an extent that the need for national security measures is diminished? etc. Commenting on the last question it may be pointed out that security and integration are counterparts in the discussion. Whereas security is defined as freedom of self determination, integration obviously means to freely give up some of this self determination. Clearly, in national security planning it is therefore necessary to try to look quite a long time ahead into the future.

Considering the different levels of decision making it is found that on the lower levels there are reasonably well developed tools that can be of some help. Studies and research are quite important and can give factual knowledge as a basis for the decisions to be taken. On the national security and national policy levels such tools are at present non-existent. The knowledge of society and the interaction of different elements of society, this knowledge is too poor to provide an accurate background. The decision making has to become political, bringing in subjective beliefs, sometimes on a majority basis. The same applies to the final step from the national to the international level. It is the step which has been least considered so far and obviously this is so because the possibilities of actually enumerating and evaluating the consequences of choosing a specific alternative are even worse than on the national scale. Still, one may give many examples that specific choices, for instance on the military level, have important effects also on the international level. One may often suspect that this influence is not considered when deciding between military alternatives. There is a tendency to put the national security criteria above everything else and disregard the national and international policy levels.

In the efforts to improve upon the present system of decision making it is accordingly important to create a better understanding of the different levels that exist, the studies and research that is needed and what criteria should usefully be employed. In this connection I would like to agree wholeheartedly with those that point to the need for what is often called peace research. Although one has to realize, that it will take many years to improve on the present pattern of decision making, it is essential - especially on the higher levels - to intensify the research regarding necessary and

sufficient requirements of decision making when national security problems are concerned.

It has already been said that one requirement for defence planning is that an effort has to be made to forecast the possible future development. This is of course a very uncertain field and as a consequence there arises a need for flexible planning, planning that can adapt itself to the development as it progresses. This consequence has led to the development of a system of long range planning that is referred to as contingency planning. The basic principle is to enumerate all possible future crisis that may be relevant from the national security point of view. Secondly, the security system should be designed in such a way that it has a reasonably adequate performance in all the different situations that have been thought of. Clearly, this type of planning is risk-orientated. It should also be remembered that the reason for the development of contingency planning is the long time it takes to build a defence system. These observations lead to one important question: If every country plans their defence in this way, what will the consequences be for the international security? If you have to guard against contingencies in the distant future, may this not lead to a build-up of armaments in a way which will lead to an arms race? If a country wants to make progress towards disarmament, does that mean that it will have to accept an increased risk to its national security? These and similar questions may be put but cannot be answered in a definite way today. Further studies are urgently called for whether they be termed peace research or something else.

To sum up, it may be said that the concept of rational decision making suffers from a number of serious deficiencies. There is also a great lack of knowledge concerning the methods of decision making, especially with regard to the higher levels. There are finally serious questions regarding the soundness of the approach altogether, as was mentioned in connection with long term planning. However, this system (or even worse systems) is the one that is being used in defence planning at present. Basically, these weaknesses in the present thinking and the present planning are at the root of most if not all international conflicts.

To my mind, the most efficient way of promoting the role of scientific study inside decision making in order to improve its quality is to bring scientists into the actual pro

cess of decision making. Inside the relevant military and political authorities there should be a place for scientists that are interested in and knowledgeable about both the technical and scientific problems involved but also a bout the political and security implications of different decisions. This is the most direct route towards an improvement of the quality of rational decisions. In this way it will gradually be possible to become more rational. It will however, never be possible to reach complete rationality in decision making.

Some discussion following:

Military Decision Making

R. Bjornerstedt (15/6/1966 - 9:30)

CALOGGERC:

My question refers to the first part of your talk, where you have analysed the process of decision making. I wonder if you might - taking as an example the American system - specify the rôle of the different institutions who have a say in defence matters: McNamara, the State Department, the National Security Council, the President. At what point of your framework do you think they should operate? Do they actually fulfill the rôle they should?

I would think that different institutions should more or less focus at different levels, and perhaps they don't do this as much as they should, especially the higher ones. I don't know.

Would you care to comment?

BJORNERSTEDT:

My first comment is a general one. It is important, no matter on what level of decision making you are involved, to be aware of the entire framework and of your own position inside the decision making system. On the lower levels, one usually finds that very few people are interested in what is needed at the higher levels where national security and national policy are discussed. As a consequence the factual background material that is needed for rational decisions on the higher levels (but which has to be produced lower down in the system) may not be worked out in a way that is most suitable. Secondly, on the higher levels one finds that the politician is often specialized in such a way that he does not have an over-all view of the decision system and its requirements.

Speaking about the American administration, the advent of the Kennedy presidency brought about the introduction of the principles of operations research, systems analysis and contingency planning. These principles were accepted by the Defence Department and used to a much larger extent than before. This gave a better ground for arriving at factual evaluations of different weapons systems on military grounds and to some extent also in terms of total defence. Still, today there remains much to be desired in terms of aligning procurement decisions with the requirements of national policy and international development.

In this respect the present administration represents no improvement over previous ones.

If you want to draw a line in the decision making system between the rôle of the politician and that of the expert, this line today goes between the total defence level and the national security level. Up to and including total defence problems one may say that the rôle of the expert is the more important. This of course depends upon what I said previously, that in this connection there do exist reasonably good tools in terms of study and research, etc. From the national security level and upwards, such tools do not exist; the choices become increasingly subjective and the rôle of the politician is the central one. Especially for these levels a continued scientific development is urgently needed.

NUCLEAR STRATEGY

R. Bjornerstedt - Thurs. 16/6/66 - 16:00

In the two previous lectures the armaments situation has been described and a conceptional framework given for military decision making. I would now like to use this framework in describing the importance of nuclear armaments. In doing so it is useful to divide the different countries into two or three classes. Let us first consider the two superpowers, the USA and the USSR.

The major role that nuclear weapons play for major power security is in terms of mutual deterrence. On the military level, if nuclear weapons exist in great quantity with invulnerable delivery vehicles and under adequate command and control, the effects of these weapons are such that a deterrence situation is established. This is a relevant argument on military and total defence levels. This is not to say that on these two levels all arguments are in favor of major power nuclear deterrence. In the long run there is an increasing danger of a political, military or technical mistake leading to the accidental firing of one or several weapons. But, at least in the short run, it is possible on the military and total defence levels to claim that the existence of nuclear deterrence provides effective protection against an attack.

On the national security level the same arguments may still be considered valid, but here the alternate possibilities of foreign policy should be taken into consideration. In consequence and being aware of the long term disadvantages of the deterrence solution, national security must call for an active foreign policy directed towards the creation of peaceful means of solving international disputes also when the major powers are involved.

When going to the levels of national and international policy, it is quite evident that nuclear weapons in the hands of the two major powers could not be considered rational. The expenditure taken to produce and maintain nuclear weapon deterrence is enormous. The same may be said for the efforts that are needed to keep up with the scientific and technical development. This latter factor also presents the possibility that the deterrence may become less stable in the future than it is today. The resources required by the deterrence system could be usefully employed inside other areas of national and international politics. Also from this point of view it would be of great value if international security could be based on other, less expensive and peaceful measures. In summing up, the deterrence argument for nuclear weapons is only partly rational and even this judgement may not be accurate in the long run.

Turning now to other aspects of major power nuclear ownership, it is relevant to consider the role of these weapons in connection with a confrontation between one major power and some of the others. Clearly, the nuclear deterrent argument is valid for one major power also against other nations. It may, however, be said that there are other and simpler ways of achieving the same objectives. In conventional military terms and often economically the two major powers have such an advantage compared with all other states that it seems unnecessary to strive for a marginal increase in security through nuclear deterrence. Another argument is then put forward, namely the possibility of using nuclear weapons as a political or military tool to impress upon small nuclear or non-nuclear nations. This has been tried in international politics several times since the second world war, for instance in connection with Suez, Berlin and Cuba. In those instances where such nuclear politics have come to involve the risk for a major power military confrontation, the deterrence aspects have once again become valid. In other situations the usefulness of nuclear policy is closely tied to the value of nuclear weapons as a means of warfare. For the tactical use, there is no clearcut answer telling what the respective advantages and disadvantages would be in a situation where both parties have a nuclear capability. Confronted with a situation where the opponent does not have nuclear weapons, the experience has been that major power nuclear employment is not credible. It has been too tremendous a step to take in comparison with the political objectives that have been at stake. Even today in Vietnam where important major power interests are involved the same has been true so far. In summing up, the military and political usefulness of nuclear weapons as means of war is doubtful. Already on the military level one might therefore question the rationality of the use of nuclear weapons. At the time when the United States had a nuclear monopoly such weapons were not found to be very useful either on the higher levels of national security etc. Their existence did not solve the Berlin situation or meet the US objective of containing the Soviet Union. A rather strong case may therefore be made regarding the irrationality of nuclear weapons in these connections.

The risk of the nuclear confrontation between the two major powers was small in the late forties and the beginning of the fifties for the obvious reason that the number of weapons

existing was too small to permit a confrontation of military significance. With the gradual increase in the nuclear arsenals and the development of thermo-nuclear weapons the possibilities became greater of afflicting decisive damage on the part of both major powers. In the midfifties the risk of a confrontation had therefore increased. At the time, the efforts had not been made to make the nuclear deterrence more or less vulnerable. There was thus a decided advantage in striking first. To strike first and against the nuclear capability of the opponent could seriously cripple the chances of a counter attack. This state of affairs created an instability and uncertainty and explains why there may be said to have been a higher risk to world security during this period.

At present, the price has been paid to get sizable nuclear arsenals, to protect these weapons from complete extinction as a result of a first strike. The result has been to diminish the risk for such a strike as the attacker no longer could prevent a counter attack of disastrous dimensions. In addition, safeguards have been added to the deterrence systems in such a way as to reduce the consequences of an accidental nuclear attack.

Turning next to those countries that, although being nuclear, have not amassed the same enormous power as the US and the USSR this will be England, France and China. Further proliferation may add other countries for which the discussion in the following would then also be relevant.

Both in time and in the size of its nuclear capacity, England is the third nuclear power. The arguments on the military and total defence levels seem to have been considered relevant for the decision to start on the nuclear road. After having produced a sizable nuclear arsenal, England was faced with the problem of acquiring suitable delivery systems. This has proved to be a difficult task. After having developed and to some extent also procured several different systems, these have been found to be inadequate from the military point of view. In the present plans, the answer to the delivery problem is a small fleet of nuclear submarines carrying intermediate range nuclear missiles. The size of this weapon system is such that it does not constitute an entirely adequate deterrence against one of the major powers. Although the amount of destruction that English nuclear weapons could

cause to one of the major powers is quite serious, it is not comparable with the certain obliteration of the English society that would result from a counter attack. The English deterrent therefore operates on a lower level than the mutual deterrence between the major powers. Obviously, this seriously restricts the usefulness of the system to deter major power aggression.

Other objectives have, however, been mentioned for the English nuclear capability. It is sometimes stated that there are military reasons for a British deterrent in connection with the Middle East, southeast Asia, China and perhaps South Africa. Considering the higher levels of decision making, one is led to ask what the probability is for a situation to develop when these weapons will actually perform the deterrent function that they are supposed to. In answering this question one should have in mind an environment where the Soviet Union and the United States possess a much greater nuclear capacity. It is difficult indeed to conceive of a situation where both major powers have disengaged from the particular arena where the British deterrent is than going to fulfil its designed objective.

Considering France next, one may add to the British discussion by taking up another contingency, namely the one of a future threat posed by West Germany. For the French deterrent to be of value in this connection one must envisage a nuclear disengagement from central Europe on the part of the major powers. The trend at present and for the foreseeable future may involve a gradual decrease of conventional armaments inside Europe. The heavy financial burdens that these arms put on the European countries are becoming increasingly felt. The involvement of both major powers in areas outside Europe also tend to lead to a gradual decrease of their conventional forces inside Europe. There is no sign, however, that the US or the USSR would extend this development into the nuclear field. Rather Europe is considered both militarily and economically to be too important to both these powers to exclude the possibility of a nuclear confrontation in connection with a military conflict in Europe. Furthermore, the present trend is directed more towards economic integration and relative military independence than towards confrontation. Considering these aspects, the independent French deterrent is at best debatable and probably not very rational when considered on most levels of decision making.

It should also be remembered that what has been procured so far, is not a credible system as there are serious weaknesses regarding both the vulnerability and the command and control of the French deterrent. The system may at present therefore invite an attack rather than discourage from it.

In commenting on the Chinese nuclear weapon, the conclusions will be similar to those of a discussion of those non-nuclear countries that have the ability to acquire nuclear weapons and that have been discussing it for some time. The French and English experience of all problems connected with acquisition of nuclear weapons will in all probability be learned once more by the non-nuclear countries. To many of them it may be reasonably easy to pay the entrance fee to the nuclear club to get the first weapons and the first weapon tests. It will again be much more difficult to acquire the sizable arsenal that is needed for deterrence purposes. It will be expensive to make the deterrent credible and stable in terms of low vulnerability and adequate command and control. If the nuclear capacity is intended as a military deterrent against imminent threats from non-major powers, this objective may in some cases be fulfilled but probably only for the time being. This is so because, if for instance Israel would go nuclear, there is a reasonable chance that the Arab countries will make every effort to do the same as soon as possible. The same argument could be applied to many other countries. One would therefore end up with a number of small nuclear powers that have been capable of procuring a deterrent that is vulnerable and the control of which is militarily and politically uncertain. Such a balance is not very stable. It is reasonable to argue that the stability has decreased in comparison with the conventional balance that existed before the development of independent nuclear weapons. In connection with the non-nuclear countries' problems, the point is sometimes made that although these weapons cannot by themselves deter, their existence may have wider implications in connection with a possible attack. The ownership of even a few nuclear weapons could threaten to escalate a local conventional war into a nuclear and perhaps more widespread war involving a confrontation of both major powers. There are two comments to make to this argument. First, considering the opportunity of a small country using a threat to make a conventional war nuclear: the possession of a rather small number of nuclear weapons may be sufficient to make such a threat possible, but this is not sufficient. One also has to know something of the outcome of a local war where both parties use nuclear weapons. The outcome would depend not only on the relative number of weapons used on both sides but also on several other factors as for instance the relative military strength, differences in reconnaissance, mobility and protection. To make the nuclear threat cred

ible, it is therefore not sufficient for a country to acquire just a small nuclear arsenal, one has to consider the entire problem of what is involved in a nuclear confrontation. Secondly, the risk of an escalation of a local war into an all out war is something very uncertain. It is to be expected that a major power would be extremely reluctant to let a local con flict influence the survival of its own people. If a local con flict becomes nuclear, it is therefore quite possible that the conflict will remain just that, both local and nuclear.

To this day, the very complex problem of the security of non-nuclear countries in a nuclear world has not received the necessary attention. As a result there are no clearcut answers and there exist many misconceptions about the role of nuclear weapons. The obvious conclusion is that future studies should be directed to a much larger extent than up to now, to wards the problems of non-nuclear nations. Only by gradually creating a better understanding of these problems will it be possible to avoid a further nuclear proliferation but it should be realized that questions of national security are among the most important that a government has to consider. To make an impact, future studies will therefore have to be thorough and detailed enough to be convincing.

To sum up the discussion of nuclear proliferation, the following question may be put: Why is it that some countries should have great numbers of nuclear weapons and be permitted to keep these weapons for an indefinite future while other countries, that do not have nuclear weapons, should formally agree never to acquire these weapons? The answer to this question has two parts. The first reason that non-nuclear countries should abstain from nuclear weapons is simply that they cannot afford them. They may be able to pay the price for a small nuclear arsenal but they are not able to get something which is meaningful in terms of major power deterrence. The second part of the answer is that a nuclear arsenal that is acquired for the purpose of deterrence against other nations whether they be non-nuclear or small nuclear countries, does not make sense no matter what decision level you consider; the military, the total defence, the national security level etc. From the point of view of rational decisions (remembering the different weak points of this concept) a development towards more nuclear countries must therefore be termed an irrational development. On the basis of the previous discussion, it is reasonable to conclude

clude that a development in the other direction is more rational. This applies to the English, French and Chinese nuclear weapons already in the short run and is in all probability true in the long run also for the major nuclear powers. For them, however, nuclear disarmament must be accompanied by the general progress towards disarmament.

The Role of International Organizations for Peace

Prof. G. Burkhardt Friday 17/6/66 9:30

"Peace and International Cooperation"

Because of the meeting of the Executive Board of UNESCO unfortunately I was not able to take part in this seminar all the time but I am happy to join you at least for a few days. I am not at all prepared to give you a lecture this morning - which I have been asked to do right now and I have to apologize for giving you a rather informal talk about some of the activities of Unesco.

I have the pleasure to convey to you the greetings and wishes of the Director General of Unesco and I would like to congratulate the Italian Pugwash Committee for its initiative to undertake a seminar like this which I believe is the first seminar of this kind held in Europe, and which I consider a very important activity broadening the scope of all those activities stated by the Pugwash Movement.

I feel that a complete and worldwide disarmament is a goal still far ahead of us to achieve. Having this long term goal in mind there are many activities and measures to be taken urgently forming the prerequisites to achieve the final goal, three of them I consider of predominant importance:

- 1) To find suitable measures to make the present very precarious and unstable situation more stable. Such limited measures are for instance, the nuclear test ban treaty or a nonproliferation pact or the conclusion of an international agreement on the production stop of nuclear weapons a.s.o. This is not really disarmament but arms control and it is a field in which the scientists can make effective contributions as the Pugwash Conferences have shown and as it was proved by the conclusion of the Test Ban Treaty for which the informal discussions at these conferences have paved the ground. I understand that part of this seminar will be devoted to the technical questions of arms reduction and control and I shall not speak about this problem here.

2) To explore the basic conditions for a lasting and stable peace in the world. This is called peace research on which yesterday Prof. Röling has given us an excellent outline.

3) To create the prerequisites for the establishment of a World Order System without which a treaty on a complete and worldwide disarmament will never be concluded. Such a system including a world law has to guarantee security for the nations giving up all their armaments supposed to serve their security up to now. Those prerequisites of a future system of world order may be created by strengthening and making more effective the already existing system of the international organizations within the family of the United Nations. It is to this point I want to limit my remarks.

Up to now public opinion seems not to be aware of the importance of these international intergovernmental organizations and very little is known about their work. Newspapers report more often on their difficulties and shortcomings than on their successes. The concept of a global authority for dealing with national conflicts seems very remote, and even unrealistic to most people. Their scepticism is nourished by the admittedly rather limited success of the UN-organizations. Although limited, the success of the United Nations - their role in maintaining peace in a period of high instability is certainly underestimated by the politicians. In spite of the heavy crises, the UN is undergoing right now, the interest of the big powers as well as of the smaller nations, in keeping up an international machinery, may grow in the future; the bipolarity of two great power blocks in the world tends to break up in a much more complicated interplay between several powers and this may well strengthen this interest, the more so if the United Nations system succeeds in its indirect peace keeping efforts, this means in its program for development, to bridge the large gap between the rich and the poor nations and to make the world more than what it is now. In this huge program Unesco's competence lies in the fields of Education, Science and Culture.

I shall not go into details about its general structure. There are four program departments: for Education, comprising all levels of education; for Science, for Social and Human Sci

ences and Culture, and for Mass Communication, dealing with all the media of communication to spread human knowledge and understanding all over the world: press, radio, television.

As most of the participants in this seminar are scientists, it might perhaps be of some interest to go a little more into details in speaking about the Science Department where I am working and therefore know more about than any of the other departments.

In science, international cooperation has already a long tradition because science in itself is international and scientists all over the world use the same language to understand each other. The question may be raised therefore if an intergovernmental organization is needed or useful to promote cooperation in the field of science which is so well established on an individual basis among the scientists themselves. There are quite a number of scientists who feel that the heavy machinery of a large intergovernmental organization would rather impede scientific progress than further it.

Certainly there are some fields in which planning and coordination is better and more effectively done between individuals or scientific unions which have their own organization for international cooperation: the International Council of Scientific Unions. Unesco gives to this organization an annual grant through which activities of this kind can be carried out.

There are, however, in many scientific programs, the execution of which calls for an intergovernmental organization. A typical example is a research program in Oceanography: an international ocean expedition needs not only the cooperation of the governments of the participating nations in equipping the research ships, but also negotiations on governmental level with nations whose shores and harbours are in the area to be explored by the expedition. This being a classical field for intergovernmental research programs, the tendency for governmental influence in science projects in other fields is growing.

Science is no longer a private undertaking of some scientists working with very limited funds on their private hobbies, but has become a major productive force and its re-

sults have a very large influence on the society as a whole. The strength and economic growth of a nation is based on its scientific potential. Science is also the prerequisite for the economic development of the developing countries, the building up of their scientific infrastructure and the planning of their research programs lies obviously in the responsibility of their governments and international programs of assisting them in this goal will be worked out on an intergovernmental level.

An intergovernmental organization, therefore, is in dispensable for international cooperation also in the field of science, what is not always fully understood by the scientists who fear individual initiative might get lost in too much administration.

By which means and methods Unesco organizes international scientific cooperation? There are many different approaches and not a fixed scheme of procedure. We are still in an experimental status and have to find out the best suit ed method in each case. Some of these schemes may be mentio ed briefly:

The Member States of Unesco or part of them - may set up an autonomous scientific organization, financed by the contributions of the founder states, for research on a speci fic field in which international cooperation seems to warrant better progress than isolated national efforts. The most pro minent example is CERN in Geneva, created on the initiative of nuclear scientists at a governmental meeting convened by Unesco. Here Unesco's role is merely to prepare the ground and to establish the organization which when created, becomes independent. CERN nowadays has a larger budget than the whole of Unesco.

Another fruitful scheme of international scientific cooperation are International Progre s. The first success example was the International Geophysical Year (IGY), initiated by the International Council of Scientific Unions (ICSU) and sponsored by Unesco. About 80 nations participated and a world wide net of observation stations was set up and furnished the scientists with a large amount of useful data for instance, on the structure of the earth's atmosphere. In 1965 Unesco has

launched a new international large scale program: the Hydrological Decade. This program is devoted to the research on the most important natural resource of mankind: the fresh water, in rivers, lakes and underground basins; its circulation and the world water balance. Also this program is financed by contributions of its Member States who develop their own national programs coordinated by the Council of the Decade and its Secretariat is provided by Unesco.

At first, created on a non-governmental basis, the International Biological Program, (IBP) entering now its operational phase, is planned to be developed into a joint program with Unesco to get more support from the governments which is needed to carry out this rather ambitious program covering the whole processes of life in the biosphere including the conservation of the natural environment.

Besides such International Programs, financed by the participating member states and/or scientific societies and foundations, there is, of course, the Unesco program proper on promotion of science by International cooperation, approved every two years by the General Conference of Unesco, covering all basic sciences but limited by the budget as well as the staff to some selected topics in which Unesco's activities can work as a catalyzer for further development.

More and more the science program of Unesco has been orientated towards the problem of developing countries on the application of science to development. This application can not be only a transfer of existing scientific and technical knowledge to the developing countries, but its very central aim should be the implantation of science in those countries and the building up of a scientific infrastructure. For this problem a special unit in the Science Department for "Science Policy" has been established, to help and advise the governments on planning and organization of science in their countries.

Another key problem for the implantation of science is the teaching of science at all levels and in particular at secondary schools. Science teaching in schools is indeed obsolete in most countries and not at all reflects the rapid change of scientific progress of the last decades. To improve

the quality of teaching, to introduce new methods towards an experimental approach to science only can lead to an understanding of the scientific method and create an atmosphere in the whole society in which science can develop.

The task in its full extension is by far outranging Unesco's limited possibilities, so the activities are concentrated in such a way as to warrant a multiplying effect. In so-called "pilot projects" scientists and professors engaged in teacher training of a region work together with experts from developed countries in a one year international seminar devoted to one scientific discipline to develop new methods of teaching, prototype material, film loops a.s.o. National study groups are set up in the countries participating in the project thus spreading the new ideas and methods over the teaching training institutes of their countries. Pilot Projects have been carried out in Latin America on Physics and last year in South East Asia on Chemistry. New ones are planned in Africa on Biology and in Arab States on Mathematics.

Finally I will briefly touch another field of activity of the Department for the Advancement of Science which is of paramount importance for developing countries: the research on natural resources. They are the basis for the economic development of a country. The economic structure of most countries in the world is based on agriculture. Cattle, fish, plants and fruits are their main natural resources and the problem of improving and rationalizing food production opens a large field for research on geomorphology, ecology, vegetation, soils, plant diseases, microbiology and agroclimatology. This field of research has obviously been neglected in the past - it does not belong to the attractive and fashionable fields in modern research which promise exciting discoveries like high energy physics or space research and to which most of the efforts - human as well as financial - have been directed during the past decades. Perhaps too much scientific progress was stimulated by the interests of the highly industrialized nations and some consideration on a re-orientation of scientific development towards the primary needs of mankind, and in particular in view of the development of scientific research in the new countries has to be done. It is here that I see a particular responsibility of

Unesco in planning its program in the field of natural and social sciences.

I very much hope that this rather rough and superficial review on only one part of Unesco's activities has given you some impression about the work of this Organization and in which way it contributes actively to the establishment of world peace by promoting international cooperation in all fields of Education, Science and Culture, thus fostering mutual understanding among nations, and by contributing to create the conditions for a world with a more even distribution of goods and facilities, a world which would be more just than our present one.

Cavalletti
- a General View
- the Italian Idea etc. - - -

(6)

A General View of the 18 Nations Disarmament Negotiations

Francesco Cavalletti, Friday June 24 1966 - 9:30

The speakers who have preceded me have set forth many juridical military and political aspects of the disarmament problems: as for myself, I think I could perhaps try to complete the picture, giving an account of the diplomatic approach and particularly of the negotiations in Geneva in which I am taking part.

I wish to begin with some general considerations on the functioning of the negotiating body, the 18 N.C., its procedure and atmosphere. Then I shall explain the difficulties we encounter and the reasons why we are not making satisfactory progress in Geneva. In the second part of my lecture I will dwell upon the future prospects of disarmament, with special reference to the non dissemination problem and the Italian proposal for a nuclear moratorium.

You are of course already aware of the 18 N.C., of its composition and structure; however, I should like to disclose some of its inner workings, which perhaps are not very well known.

Let us enter into the conference room and see the conference at work! We are 17 delegates from 17 countries - 4 western, 5 eastern and 8 non-aligned - sitting around the green table in the hall of the Palais des Nations in Geneva, the European headquarters of the U.N. We keep the 18th chair free and unoccupied at the disposal of France, in case France, which is also a member of the Committee, should decide to join us. Many advisors, military experts, interpreters and members of the Secretariat are also present, giving to our meetings a rather solemn appearance.

The press is not admitted. But a number of journalists - eager for news - wait for the delegates in the entrance hall and flock around them before and after the meetings. So, in practice, not many secrets are kept. Moreover, this is not a nuisance, be it is useful and even necessary that public opinion knows about the essential developments in the negotiations and is aware of the difficulties.

The plenary meetings take place twice a week. In previous years we met every day, but we realized that it was necessary to space them out in order to have more time for reflexion and preparations. An extensive verbatim record of each meeting is issued, remains classified for a fortnight and is open to the public later. During the first sessions of the Conference, the Committee experimented with a few confidential meetings without "procès verbal" (verbatim reports), but the initiative for various reasons failed

to be constructive. On the other hand, the Western delegations proposed several times to set up restricted sub-committees and working groups, but the Soviet delegation never agreed.

The delegates speak from a prepared text, but, in the exercise of their right of reply, a free impromptu debate often develops. The chair of each meeting rotates, according to alpha betic order, yet - upon general consent - the Soviet and the American representatives are the real and effective co-chairmen of the conference. They propose the agenda, the dates of the recesses and reconvenings, the draft reports to the U.N. and so on. To discuss all these topics the leaders of the American and Soviet delegations meet privately very often, having confidential exchanges also on basic matters. Moreover there is in Geneva, out side the normal diplomatic channels, a permanent confidential link, at high level, between the two major powers, which is of considerable political importance and significance and can be helpful in certain circumstances.

Although, according to an agenda, a particular item is suggested for discussion in each meeting, the delegations are entitled to address the committee freely on any subject concerning disarmament.

This slightly disordered procedure was unavoidable at the outset of the conference, when the two co-chairmen were often in disagreement on the agenda, but it has been continued later, when their disagreement no longer persisted, because it appeared that this loose procedure was allowing total freedom of expression to everybody at any given moment.

The tone of the debates, very sharp and polemic in the initial years, has become gradually more and more polite and even friendly. Although the communist delegations have not given up criticizing severely the Western policy, thus provoking fitting replies, the atmosphere of the conference is essentially good. Close relations among delegates, established through all these years of daily contact, also outside the conference, have certainly contributed to it. There is in Geneva a rather active social life. It is not exactly "le congrès s'amuse": it is a series of working parties always dangerous for the liver, but often useful for the work of the conference. In these social gatherings the exchanges of view are of course more open and frank than in the conference room, when every single word is "recorded" and commits the delegations.

As you know, the tasks of the conference are to elaborate a treaty on general and complete disarmament and to conclude agreements aiming to reduce tension and leading to general and complete disarmament. This broad agenda, which includes - as you have seen - not only the remote goal of total disarmament but also the step-by-step approach was one of the constructive understandings preceding the convocation

of the Geneva conference. In fact, in the fall of 1961 and the U.S. and S.U. governments, wishing to resume in the following spring the disarmament talks broken off in June 1960, and entrusting this task to the 18-N.C., decided upon a number of preliminary questions, namely the before said terms of reference and some general guidance. This guidance, based on the very philosophy of disarmament and approved by the U.N., concerned mainly the principles of balance and control.

It has been recognized that in a world where there still is mistrust and in which peace is essentially based on the mutual deterrent and on the balance of military strength, only fairly balanced and safeguarded measures of disarmament are obtainable. No country will accept a form of disarmament which upsets the military equilibrium and, being uncontrolled, would jeopardize its security. In other words, we must seek agreements which involve equal limitations for all parties concerned, bringing down the present armaments level without generating imbalance in the military defence system. They must also make certain that no one will undertake forbidden military activities clandestinely.

These are logical and clear principles. Yet it is extremely hard to set this theory on practical ground, to reconcile them with the conditions which each party considers essential for maintaining its own security. All the tremendous complexity of the disarmament negotiations involves one single problem, but a huge one: to seek out progressively matters in which a reduction of the military effort has the same impact - or nearly the same - on all the parties concerned and which can be duly safeguarded without intolerable intrusions.

This unparalleled difficulty appeared at the outset of the negotiations dealing with the treaty on general and complete disarmament. According to the American outline of such a treaty, all armaments, conventional and nuclear, should be reduced in three stages by 30% or 35% at each stage. However, the Soviet delegation did not accept this percentage criterion which was equal for everybody and suggested a system based on an unbalanced and discriminatory criterion. The Soviet delegation, stressing the prevalent dangers of nuclear weapons, claimed that the nuclear means of delivery should be eliminated or at least very drastically reduced, in the first stage - which in the Soviet utopian view should last one or two years - while the percentage criteria could be applied to the conventional armaments. It seems clear that the adoption of two different systems of reduction would give an advantage to countries having a superiority in conventional weapons and manpower.

As for the safeguards, the American outline proposes a development of inspections strictly in proportion with the progression of the disarmament measures, while the Soviet draft treaty actually avoids solving the problem of satisfactory control. The

position of the Soviet delegation seems to be as follows: the elimination of the agreed quantities of weapons will be brought about under international supervision, but no inspections should be allowed on the remaining quantities of armaments, nor would any guarantee be given against the manufacturing of a new and even bigger military arsenal.

Difficulties of the same nature, although different in the application, arose during the debates on collateral measures. It would take too long to explain all these proposals and the criticism they have met from one side or the other, I will only mention some of them as an example, so as to help bring about a better understanding of the matter.

The Soviets - just to mention one instance - are relentlessly insisting on the withdrawal of foreign troops and the dismantling of foreign bases as the most urgent and important collateral measure. In so doing, they completely disregard the geographical nature of the Western defence organization, in which the maajor western ally is widely separated from the others. It is clear that the adoption of such a measure would completely upset the present military balance. Another example: the plans for denuclearized zones in Europe, although attractive, bear the same unbalanced character, because the zones proposed involve no part of the Eastern territories, where actually the bulk of the nuclear weapons directed against NATO are deployed.

While these proposals disregard the principle of equilibrium, some others neglect the principle of control. For example, - the Soviet proposals for a reduction of all military budgets by 10% would work out only if the Soviet government accepted technical and political control of its budgets in order to avoid military expenses being concealed in a non-military budget. But unfortunately the secret character of the Soviet regime has prevented up to now such investigations.

As for the Western proposals, they stress the logical idea that the first step of a disarmament process can only be the "freeze" of military production in some fields and the physical elimination of some agreed stocks of weapons. Pursuant to this point of view, the American government, with the support of the other western delegations, has proposed, on the one hand, a verified cut-off, a verified "freeze" of the strategic means of delivery, the test ban, a non-dissemination treaty, and, on the other, the destruction of certain types of bombers and the transfer of agreed quantities of military fissile material to peaceful purposes. All these proposals have been rejected by the Soviets, who claimed that they were useless and involved military espionage.

More consideration has been given by the Soviet delegation in Geneva to the test ban and, particularly after the Moscow treaty,

to the prohibition of underground testing. But also in this field, the Soviets have refused any kind of inspection on their territory. They claim that all underground tests can be detected and identified by national instruments and that therefore on-site inspections would constitute intolerable and dangerous espionage activity. On the American side, it is maintained that there are in the world a number of doubtful seismic events which could be either nuclear explosions or natural phenomena. In order to clear up the real nature of those events a limited number of on-site inspections is necessary. To solve this deadlock the Western delegations have suggested a technical confrontation of the instruments of detection of both sides, but, the Soviet delegation having refused this proposal, no substantial progress has been possible.

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As you have seen the difficulties we have met and are meeting in Geneva are very serious so it is not surprising that the balance sheet of the conference, after 4 years of work, 263 meetings and about 2,000 speeches, is limited and indeed frustrating. It involves only the three agreements, reached in 1963 not directly in Geneva but no doubt under the Geneva influence, namely the partial test ban, the establishment of a line between Moscow and Washington and the ban on placing in orbit weapons of mass destruction. In many other fields the 18 N.C. has achieved some progress, some "rapprochements", some improvement of mutual understanding, but it has recorded no really concrete achievements.

Yet, limited as they are, the results of the Geneva talks prove that the efforts for disarmament are not a waste of time and therefore, in spite of all the difficulties and the so bre general international situation, they must be followed up re lentlessly. Indeed, in the nuclear age disarmament and arms con trol have become an imperative necessity which humanity cannot neglect without risking its own destruction. The conviction is growing that a massive accumulation of weapons of mass destruction is not only extremely dangerous but it is also unnecessary. If the multiplication of nuclear devices involves, on the one hand, an increasing risk of a nuclear holocaust, it appears fool ish, on the other, to continue to waste a tremendous amount of valuable economic resources on piling up further stocks of nuclear weapons, while those existing are already quite enough to destroy the potential enemy three or four times over.

In the years 1963 and 1964 the major powers seemed to be ready to act in accordance with this truth. In those years some limited but very significant agreements of balanced and safe guarded disarmament were reached - I have already mentioned those agreements - opening up the way to the policy known as the policy

of "mutual example". In this connection, steps of disarmament were undertaken upon unilateral and spontaneous decisions, appropriately co-ordinated and timed. The cut-back in the production of military fissile material in S.U., USA and G.B. and the reduction of military expenses in S.U. and USA belong to that period. This promising process based on two constructive trends has stopped, but it should be resumed and, in spite of the general political situation, I believe it could. Moreover, in Geneva we should concentrate on the rapid elaboration of some new limited agreements, avoiding matters which require a large amount of control, which would now be impossible to obtain. If some such agreements could be reached, they would again make possible some further "mutual examples", namely some new unilateral but co-ordinated decisions to halt the arms race in some fields. These decisions would not be based on inspections but on mutual trust. By proceeding along two lines, on the one side through limited agreements, on the other through unilateral provisions, gradually more and more ambitious goals could be attained, in the hope that, during this period, the Soviet regime will reconsider its present stand on the basic issue of control, the solution of which is without any doubt necessary to achieve extensive and substantial disarmament.

There are some positive symptoms which confirm that this trend is not impossible, indeed it has already started. The disarmament negotiations at Geneva are now focused on a few concrete and realistic objectives, limited in scope but politically very important. Restricting the previous academic debates on general and complete disarmament - although this remote and utopian goal is kept on the agenda as a symbol of good will and hope for the future, the 18N.C. is now dealing with measures, like the test ban and non-dissemination, which should be ripe for agreement. If an agreement on one of these subjects, particularly on the non-dissemination treaty, could be concluded, it would enhance enormously the mutual confidence and give a start to a "rapprochement", in which mutual examples could be relatively easy.

Furthermore, another favorable element has to be stressed: it is the spirit with which this concrete work is now undertaken in Geneva. There is no sign of discouragement. On the contrary, there is a general firm determination to go on trying and trying again, exploring all the avenues leading to an understanding. The good will and the preservice of the Western and allied delegations has always been unquestionable, but in the past we could not say the same of the Soviet delegation, which has often appeared to be more interested in propaganda than in serious ne-

gotiations. Now the situation seems to have improved. Above all there is no longer the danger that the Soviets - as happened in the past - will break off the negotiations. Moreover, the simple indisputable fact that everybody wants to go on negotiating is a positive and encouraging event, whose political importance must not be underestimated in present circumstances. The mutual influence existing between the Geneva negotiations and the world situation could turn, at long last, to the advantage of peace.

Discussion following Cavalletti:

"A General View of the 18 Nations Disarmament Negotiations"
(Friday, June 24th 1966 - 9:30)

LAPTER: It is argued by some strategists that the denuclearization of Central Europe could produce some sort of disequilibrium because while Russian nuclear rockets are deployed outside the so-called Central European zone, most of the western nuclear warheads at present, are situated in Western Germany. So may I ask the following question: Is it really necessary for the defence of any part of Europe to have nuclear warheads just in Central Europe? Isn't it so that under modern conditions - that is, after the advent of the ICBMs - Central Europe could be defended both by the West and by the East by means which are deployed outside the disputed zone, I mean outside the Central European zone?

My second question is closely related to the first one. Would, in your opinion, freezing of the existing nuclear situation in Central Europe cause a disequilibrium or would it rather comply with the principles of Zorin McCloy agreement which demands that the existing balance of forces should not be changed so that the security of each party should not be jeopardized?

CAVALLETTI: Well of course, there are many possibilities to defend Europe by both sides using other means than the short range or medium range missiles, which are located in Russia and could be located in Western European territories. As you know there must be some nuclear submarines somewhere which could collaborate in the defence! But we must take into consideration the consequences of the Polish proposal, namely the removal or the freeze of nuclear weapons from the territory of Central Europe. This measure is unbalanced. If it were applied, nuclear weapons would be removed or freezed in Western territories, while practically nothing would be removed or freezed in the Eastern European territories, because, as far as we know, very little nuclear weapons are stationed there. On the other hand, in the Soviet territories, which are not very far from central Europe, a very important array of nuclear weapons would remain and could freely increased. That means that the measure of denuclearization or freezing of Central Europe is unbalanced, and if accepted, it would jeopardize the Western defence.

LAPTER: If I understood you correctly, your reasoning would lead to the acceptance of an assumption that if the USSR would introduce, for instance, some amount of nuclear weapons into the territories of Poland, Czechoslovakia, Eastern Germany then the freeze would be more easily accepted by the West?

CAVALLETTI: As a matter of fact, I think it would be easier to accept this proposal if the Soviet Union would offer some part of its territory for a denuclearization or for a freeze. Up to now, all proposals concern only European territories. I think that the best way to arrange the balance in this case is for Russia to add a certain part of its territory to the Eastern zone involved in the proposal. I am afraid that for the time being this possibility is very remote for many reasons, inter alia because the Soviet Union does not appear ready to accept inspections on its territory, as it would be necessary in an enlargement of the Gomulka plan. I think it has already been proposed to the Soviet Government to add some part of its territory to the Gomulka plan.

CICANOVIC: We have discussed here the work of the Committee of the Eighteen Nations and I would be particularly interested in Your Excellency's opinion about the role and proposed plans of the non-aligned countries within the Committee. I am asking this because there were opinions expressed in a previous discussion that the non-aligned countries are advancing as a condition for a non-proliferation treaty or even for an extension of the Test Ban Treaty that these measures or agreements be coupled with some sort of denuclearization measures on the part of the big nuclear powers; and that this request somehow came up as a precondition, or an obstacle, towards concluding an agreement. I disagree with this view, because I am convinced that these countries are sincerely interested in concluding any sort of disarmament measure. I would be very glad if you have some comment on that.

CAVALLETTI: The role of the eight non-aligned nations in the Geneva conference has been very useful. Because of the presence of these delegations the atmosphere of the debates has improved. They have advanced many interesting proposals, which although not accepted so far, have contributed substantially to the works of the Eighteen Nation Committee. As for the non-dissemination agreement, the non-aligned delegations have not really put pre-conditions to their acceptance of the treaty, but they have stressed that their renunciation to nuclear weapons should be balanced by some disarmament measures undertaken by the nuclear countries themselves. More precisely the non-aligned countries have elaborated a memorandum on the question of dissemination, in which they have asserted that if the non-nuclear countries make the sacrifice to renounce the right to have nuclear weapons, the nuclear countries should also make some sacrifices and show their good will to disarm. I think that the eight non-aligned delegations are right. But on the other hand, if you

want to negotiate now some other measures of disarmament, besides the non-dissemination treaty agreement would be inevitably delayed. Personally, I think that if the two blocks reach an agreement on non-dissemination, its political importance will be such that the non-aligned countries will make the sacrifice for the sake of peace and accept this agreement without any condition. But this is just a personal evaluation of the situation.

BERTOTTI: I would like to know a little more about the collateral work that I know is being carried on in Geneva, on the side of the Disarmament Conference. In particular, what has been done on the juridical aspects of the problem of detection of nuclear explosions, and on the problem of controls? Is this work carried out jointly by the Western and Eastern countries?

CAVALLETTI: As you know, unfortunately we could not set up working groups for the various matters on the agenda of the conference. I think that at the beginning the idea was to divide the Eighteen Nations Committee in several groups, so that each group could, study a particular problem: for example; juridical group, technical group, special group for the problem of testing, etc., so as to have, as it is generally done in all the conferences, several groups working simultaneously. Of course they would have had to refer to the General Committee to have their reports approved. But the adoption of such a procedure is very difficult, because the Soviet delegation is not ready for such an approach; the Soviet delegation wants to have only general discussions in the framework of the Plenary Committee: the setting up of working groups has been proposed several times, but the Soviet delegation never accepted. Only once the Soviet delegation was ready to set up these working groups, but it put such conditions we couldn't accept: it was when we discussed the Gromyko proposal - the Gromyko proposal is a sweeping proposal to destroy practically all means of delivery in the first stage and we had some other proposals not just so sweeping. The Soviet delegation said, "Accept the Gromyko plan in principle, and then we are ready to set up a working group for the details". Of course, we couldn't accept the Gromyko proposal in principle. So, what you said is quite right: we have a bad procedural arrangement but it is not our fault.

BERTOTTI: Why does the Russian delegation refuse to enter in these talks, which, after all, deal with technical matters and have no political importance?

CAVALLETTI: I think there are several reasons. Maybe one reason is that they want to have all other four allies always together discussing this matter. Of course, if we set up some subcommittees, probably the subcommittees would be restricted, so that not everybody would attend them. I think the Soviet delegation doesn't want to discriminate leaving somebody out of the subcommittees. Well, another opinion which could be, perhaps, not very far from the truth, is that after all, the Soviet delegation was seeking to take advantage of the Committee for propaganda. It is much easier to make propaganda in a forum of seventeen delegations than to make propaganda in a small working group. As for the technical work, I think that the Soviets are rather afraid of their scientists: they fear they might get out of the instructions. In 1958, there was a conference on surprise attacks, which had, technically, a good result; the scientists on both sides understood each other very well; but maybe the Russian scientists went a bit too far, they didn't respect the official instructions. These are the reasons, I think, why the Soviet delegation did not accept the proposal we have made several times, to have a confrontation of the national instruments of detection of seismic events in order to decide the question of the inspection of the nuclear test ban.

AMALDI: May I ask you, how many experiments have been made about these detection systems? We know of rather large scale experiments that have been set up - I think - in the United States. Do you know if similar experiments have been made in other parts of the world?

CAVALLETTI: The Americans have made a very thorough study of this matter - they call it - "The Vela Project" - but we don't know if the Soviets have. They must have, but we don't know. Now, as you know, there is on the way the Swedish initiative for the club of detection. A group of countries had a meeting in Stockholm lately, the first meeting; for the time being, the result of this meeting was not very important. The result was that the countries concerned, the countries that were present in Stockholm, will exchange their informations on a national level, I mean, not setting up an organization. The Swedes want to proceed very carefully in this matter, because the problem of inspections is very closely connected with it and the Swedes want to keep the detection club on a technical ground. If the Soviets come to believe that the results of the Stockholm meetings or the Stockholm studies will be the proof that on site inspections are necessary, the Soviets will oppoæ it; on the

other hand, if the Americans come to fear that the result of the Swedish initiative will lead to the conclusion that inspections are not necessary, the detection club will get in other troubles. So the Swedes want to go on very gradually and very cautiously, in order to see what they can achieve on the purely technical ground. What they have realized up to now is to exchange informations. Now they don't want any thing more.

AMALDI: May I comment on this very important point. It seems to me it would be extremely important if it were possible to perform a real study, as it is done on any other scientific subject, in which the scientists and technicians of all countries are involved and go to the bottom of the problem and see what is the real situation, what is possible or not possible; because as long as there is not a clear statement on this point - and there could be one, as on any other problem of physics or chemistry or biology - then of course, the discussion will go on forever. So it seems to me that it is really very important to succeed in setting up an objective evaluation of how far the detection of an explosion can be distinguished from seismic phenomena. Thus I understand the caution which is taken in initiating this work.

CAVALLETTI: You are quite right, this is certainly a positive development especially because the Soviet Union has always been opposed to a technical confrontation in the framework of the conference. We tried to get the American scientists and the Soviet scientists together in Geneva, but the Soviet answer was that this is not a question of technicalities, but of political will; that everybody knows that inspections are not necessary; that the Americans do not want an agreement and for this reason they ask for inspections. Now the Soviet have shown a favorable attitude toward the Swedish initiative, putting themselves in a rather illogical situation. In fact, it could be argued that if the Swedish initiative is good there is no reason why a confrontation of the technical systems of detection and identification between Soviet and American scientists could not take place in the framework of the Stockholm Conference. For this reason the Soviet attitude towards the Swedish initiative is a progress. The Soviets have recognized at least in this case the utility of the technical work of the Stockholm meeting. We'll see later what progress can be realized.

AMALDI: May I ask you how this Swedish proposal has been received? Are there other countries involved?

CAVALLETTI: They started launching the idea that a detection club be set up, and then they sent out a restricted number of invitations. I think about ten countries have been asked, excluding the nuclear powers. The representatives of these powers met in Stockholm one month ago. Among others there were representatives of Canada and Australia, for the Western side and those of Rumania and Poland, I think, for the Eastern side.

BERTOTTI: I am sorry to hear there are no seismologists present here. I had the impression that this study proposed by the Swedish delegation would certainly have been useful in order to provide to the non-nuclear nations the data to detect big nuclear explosions, but I consider it unlikely that at this stage they would have been able to answer the main question, namely, given a set of seismological observatories, what is the minimum yield of a nuclear explosion which can be actually discriminated. On the other hand, this is the purpose of the American project, which, I believe, is an enormous project. It involves many different seismological stations built especially for this purpose and all connected on a time sharing basis with a big computer. On the other hand, the Swedish proposal envisages only an exchange of data.

CAVALLETTI: Yes, but this exchange of data is, as I told you, only a first step. The Swedes themselves recognize that it is not extremely important; what is important is the idea to have some real and sure technical common knowledge of the situation as far as the identification is concerned. Of course, technical studies are not enough to generate an agreement on the test ban. We cannot neglect the political side of the problem. Both sides must be ready to sign an agreement.

CALOGERO: I have three questions. I think perhaps the first two are closely connected. The first one concerns the procedure of the reduction of armaments. There appears to be two main doctrines: that of proportional reductions and that of reduction to a given level. In those sectors where each power is stronger, he prefers the proportional reduction; in the sector where he is weaker, he prefers to go as soon as possible to a given level. This is, e.g. the pattern concerning conventional armaments, where the Soviets but not the Americans would be quite prepared for proportional reductions and it is also the pattern in nuclear

armaments, where the situation is reversed. There is however, a difference in the fact while the U.S. quite openly states that the Soviets are stronger on the conventional side, the Soviets cannot say for obvious reasons that they are weaker on the nuclear side. This it seems to me makes the official discussions somehow distorted, because there are certain important arguments which cannot be told explicitly. While, I believe, everyone is quite aware of the situation, I wonder whether there is any prospect of finding some intermediate kind of mixed proposal which might lead to some agreement on what should be the general principle concerning how to reduce armaments. This is my first question.

The second question concerns the proposal which has been advanced by the United States recently, the so-called cut back; namely the transfer to peaceful uses of sixty thousand kilos of fissile material on the American side, the forty thousand on the Soviet side. The official Soviet answer is an extremely weak one; namely that this is such a small measure that it is not even worth taking it; which seems to me no argument at all. What in your opinion is the real reason why the Soviets do not accept this proposal? Is it because they do not want to accept the principle of proportional reduction in the nuclear field.

My third question concerns the Swedish proposal which I think was put forward in one of the last meetings of the last session of the Eighteen Nations Conference, concerning the extension of the test ban to underground explosions namely that no outside inspections provided for in the treaty but that each country, if it is not satisfied with certain seismic data, may ask any other country for explanations, and if the explanations from the other country are not satisfactory, then it has the right to withdraw from the treaty. This method is termed, I believe, "inspection by challenge". This proposal has not been accepted by the Western side. It has been accepted, if I'm not mistaken, by the Soviet side. So I wonder if you will comment on this.

CAVALLETTI: First question - concerning reduction: yes, I agree with you that both criteria have some setbacks; and in a certain way, neither could be applied completely. Let's take the percentage criteria; it can be very good at the beginning, but if we apply it at the end of the disarmament process we could have some evident difficulties and unbalances. On the other hand, the Soviet proposal for nuclear weapons and their delivery vehicles is quite unrealistic. The process of general disarmament will

be concluded when the zero level is reached. We put the zero level at the end; the Soviets want to put it at the beginning. The Soviet delegation proposes that already at the first stage both sides eliminate all nuclear weapons or nearly all. Parity for the Americans has to be established at the end. Parity for the Soviet Union is at the beginning. Parity is a different concept than equilibrium: I think we must try to keep the equilibrium as long as trust among nations is not reestablished. On the other hand, there have been certain moves on the side of the Americans to take into account the present disparity of the armament situation: they have proposed an unbalanced transfer of quantities of fissile material to peaceful uses, more for the Americans and less for the Russians. The Americans have also proposed the destruction of certain stocks of armaments and they appeared to be ready to put in such a bonfire a bigger amount of weapons than the Russians. In conclusion, I think that all these ideas, equilibrium; parity, percentage reductions and quantitative reductions, must be explored slowly and patiently in order to find some arrangement.

As to why the Russians have not accepted the transfer to peaceful uses of sixty thousand kilos of American fissile material against forty thousand kilos of their own, I think that the reason is this: the transfer of fissile material to peaceful uses is connected with a freeze of the production of fissile material. The transfer of a certain quantity has no practical value as a disarmament measure, if it is not connected with a freeze. But the freeze must be inspected and the Soviet Union should accept certain inspections. The Soviet delegation doesn't want to declare that it is against the inspection of the "freeze", and therefore the Soviet delegation states that the freeze has no value because of the great amount of fissile material already in existence.

The third question concerned what you called the inspection by challenge. This is a Swedish idea: in case of some doubtful event one party can ask for an inspection; if the other party refuses, the first can declare that the treaty is broken. This proposal has not been discussed so far in Geneva. Neither the Americans nor the Russians appear to like it very much. And as a matter of fact, this proposal is somehow illogical, given the situation that one side says we need inspection and the other side says we oppose any inspection because inspections are not necessary; the basis of an agreement involving inspection by challenge would be fragile.

CALOGERO: I think the position concerning the necessity of inspection taken in Geneva while negotiating the treaty is quite a different matter from the reaction either by the American Government or by the Soviet Government in one concrete case. Suppose a treaty based on the Swedish proposal is signed and suppose after two months there is one unidentified event. Well, first of all, I would expect the American Government to act very cautiously on this particular instance, also in the light of world public opinion, because of the dangers involved in breaking the treaty. And then I would also expect the Soviet Union to react very cautiously: it is different for the Soviet Union to accept a treaty which involves the principle of inspection and it's another thing perhaps to accept one particular inspection in one particular place at a specific time. I agree of course, that it is very dangerous if a treaty is signed which has many chances of being broken, because this would have very bad feedback effects on the international situation. But however, it seems to me that the method of inspection by challenge should not be written off as necessarily leading to such a disastrous outcome.

CAVALLETTI: Actually, the idea was launched and there was not really an official reaction by the American or the Soviet delegations, so that the idea is still there. However, I think that neither the Soviets nor the Americans liked it very much. And you must take into account that the last word about the inspection from the American side was that seven inspections a year are necessary, which means nearly an inspection every two months. So logically how could they say: we accept a treaty and if, by any chance, an inspection is necessary, we will ask for it?

AMALDI: I understand what you say; but in a certain sense if there is real will to reach an agreement, the two big powers should be ready to make some concessions or at least to bring their point of view a bit closer, because if two have different opinions and each one says: well this is my opinion and I don't move absolutely from my position; then nothing comes out. It is necessary that from both sides there is some effort to show some good will saying: we accept this, but you accept that and so on.

CAVALLETTI: Yes, that's right. If you could talk to both sides, if you could convince them. I tried, but I didn't succeed.

STONIER: You have mentioned several times that you think that complete disarmament obviously is not possible in the near future; would you care to make any kind of guess as to when it

could occur in the future? Would you say it is a matter of five years, ten years, twenty, forty or a hundred years?

CAVALLETTI: I don't think in my time; but we must start working now. You know for achieving general and complete disarmament we must set up a new world. As far as we proceed in general and complete disarmament, we must also proceed in setting up peace keeping machinery, and an international peace force; at the end of general and complete disarmament there must be a system of world security with an international police force, to keep order in the world. Unfortunately, that's far away. But there is an element which is a very important incentive for rapid progress in general and complete disarmament; it is the tremendous risk of atomic weapons - I mean the negotiations on disarmament which have already failed in the past, shouldn't fail now; the alternative could be destruction of humanity. This is really an imperative not to remain idle.

EDWARDS: What are the chances of bringing China, France, or some of the other developing nuclear nations into the discussion at this point?

CAVALLETTI: Perhaps this question applies only to France, and not to China, because China wasn't asked to join the Eighteen Nations Committee. There is, of course, a chance to bring France back; this perspective is connected with the whole of French policy. As for China, the effort which is being done now is to bring China in the World Disarmament Conference; maybe you know that, in the last session, the United Nations voted on a resolution in favor of World Disarmament Conference, in which China should take part. But, up to now, the reaction of China is quite negative. She asks to be admitted first to the United Nations. On the other hand, there is a rather vague and propagandistic Chinese proposal to have a meeting of the five heads of government of the nuclear countries in order to destroy immediately all nuclear weapons. But even so we can go on negotiating in Geneva, for a certain time. I mean without France and China; it will be impossible to achieve general and complete disarmament without China and France, but some limited steps in disarmament, of the kind we are discussing now, can be achieved in Geneva.

PILLAI: I don't think the failure in the disarmament negotiations would lead to a world nuclear confrontation. I think this would help us to be more conscious of the question of disarmament. The present failure of the disarmament negotiations will only increase the importance of disarmament.

CAVALLETTI: Well, certainly the disarmament negotiations are based on the idea that disarmament is highly necessary. We hope they don't fail, but I think that the simple fact that they are going on is an element of the relaxation of tension at least is a hope.

AMALDI: May I try to comment on your first statement? You said that you don't believe that the failure of this agreement on atomic disarmament will mean a holocaust of the world. I don't know on what basis you believe this. I don't say that this will be a necessary consequence, but as long as there is no agreement, there is a certain probability. Now, it is very difficult in such matters to state how much is the probability; we certainly do not have the possibility to estimate it a priori; but there is certainly a non zero probability, and you know how all insurance companies are organized; they take into account, when they establish what you should pay for the insurance of the probability of a certain event and of the amount of damages that such an event would involve. Even if the probability of such a holocaust is not very great - a point I doubt very much - since the holocaust is a very big stake. I think that everything should be done to avoid it. So, I feel that one should be very careful on this point.

CAVALLETTI: You know a possible nuclear conflict is a result of several bad events and one of these bad events would be a failure of the disarmament negotiations. I agree that this may not be enough; I hope that, even if we should one day unfortunately stop talking about disarmament in Geneva, this day would not necessarily initiate a nuclear conflict; but another negative element would have been added to the general situation.

AMALDI: That is also my personal point of view. Well, we have discussed in these days, and everybody knows, how it happened that the two atomic bombs were dropped on two cities in Japan. Now, I really feel that we are conscious of what the atomic bomb means. I mean how I feel as a human being, and not as an Italian or a man living in Rome - I would be extremely upset and horrified if a similar event were to take place in any part of the world, absolutely irrespective of whether it is in Russia, China, the United States or Italy. I feel that even to repeat simply what happened once is a tremendous thing and one to be avoided absolutely even if this does not mean a complete big war with hundreds of megatons dropped on many countries.

BERTOTTI: I have another question. During the last few years, the arms race between the USA and the USSR seems to have been at more or less a stationary stage until very recently the problem of the anti-ballistic missile was considered. Now, it seems to me that this is very important because it involves a very large expenditure. It also involves the chance that the present balance of power between the two major powers be upset. I wonder if there is any opportunity that this point be discussed at Geneva?

CAVALLETTI: For the time being, we have not discussed this particular point. We are talking generally of the military balance or equilibrium, which is after all a rather vague concept. I mean, it is a slogan when we say that peace is based on the military balance; in fact, peace is there and there is a certain amount of weapons on each side. We suppose they are in balance because there is no war. We have had a lot of discussion about the military balance, but not on this particular point; it is a bit too technical.

Are there any more remarks? If not, then thank you very much.

The Italian Idea of a Nuclear Moratorium

Francesco Cavalletti June 24 1966, 11:30

In my previous lecture I have given a summary of the Geneva negotiations; now I want to deal with a particular problem which is on the agenda of the 18 N.C., the problem of the non-dissemination of nuclear weapons.

I believe other speakers have already spoken about the possibility that new countries, besides the five which already have nuclear weapons, will in the near future manufacture or acquire nuclear weapons, and about the dangers that would arise if the number of nuclear weapon states were to increase. The efforts to stop the dissemination are based on these assumptions, aiming to prevent the catastrophic consequences of the spread of nuclear weapons.

I will not dwell on this matter, but concentrate my remarks on the possible solutions to the problem of non-proliferation and particularly on an Italian proposal for a nuclear moratorium.

The U.N. Assembly, entrusting the 18 N.C. with the solution of the problem of non-dissemination, has outlined some guidance for the Geneva negotiations, namely, it has instructed the Committee to take into consideration the two draft treaties introduced by the American and the Soviet governments, a memorandum of the 8 non-aligned delegations at the Geneva conference and the unilateral draft declaration on a nuclear moratorium tabled by the Italian government. In compliance with that resolution, the 18 N.C. is now studying all these proposals.

It seems clear that the best, most complete and final way of putting an end to the proliferation of nuclear weapons is the conclusion of a general non-proliferation treaty. All the countries of the world should participate in such an agreement but even if participation in this agreement (as was the case with the Moscow Treaty) were incomplete, a non-proliferation treaty which was accepted by a large number of powers including the USSR and the United States would be of tremendous military and political importance.

As regards the political aspects, if one recalls the wave of hope and confidence which the Moscow Treaty gave rise to one can easily contemplate the advantage of a non-proliferation treaty concluded in the present day circumstances and at a time of crisis in Southeast Asia.

It is for these reasons that I have always maintained at Geneva that the conclusion of a non-proliferation treaty should be sought in priority and by all possible means in view of the needs of general security. This effort must be continued relentlessly while there is a chance of success, and I think there is still a chance of success.

However, it would be unwise to close our eyes to the practical difficulties in the negotiations which could end in failure or drag on indefinitely without results. The principal obstacles are known. First and foremost, the Soviet government continues its opposition to any fair agreement. It seems that for the Soviets a non-proliferation agreement is not so much a means for preventing a sixth country being capable of using nuclear weapons, but rather an expedient for trying to weaken the Atlantic Alliance, to divide the western allies, and to prevent any European integration. Through this expedient the Soviet Union is endeavoring to prevent nuclear consultation and co-op-eration that have nothing to do with individual rights to use nuclear weapons.

That is the main difficulty in the way of agreement and the western representatives at Geneva are patiently striving to convince the Soviets that a limited collateral measure such as a non-proliferation treaty can neither eliminate the alliance nor block the process of European integration which despite recent difficulties remains one of the principal objectives of the policy of many European countries, including mine.

Furthermore, we cannot ignore another complicating and delaying factor which has emerged during the debates both at the United Nations and at Geneva. Some non-nuclear and non-aligned countries, particularly some which are already approaching a nuclear military capability, have stated that they would not wish to finally renounce nuclear weapons without there being certain commitments on the part of the nuclear countries. Non-proliferation, they have said, must not remain an isolated fact, but must be a stage in a process and be followed by the cessation of the nuclear arms race and by a start of the destruction of nuclear arsenals.

These claims which refer particularly to the cut-off and the test ban partially correspond to the proposals which have long since been put forward by the United States government, but the Soviet government does not seem disposed at the

present state of affairs to accept these proposals which would necessarily entail controls.

On this issue, then, the difficulties stem once again from the Soviet Union, but it must be recognized that in any case if we wish to accommodate the claims of the non-nuclear countries lengthy negotiations will be inevitable so that even at best the non-proliferation agreement, which is extremely urgent by its nature, could be speedily achieved. Indeed the demands of the non-nuclear and non-aligned countries when kept within reasonable limits seem logical. One can understand that non-proliferation is one of the first, even the first measure to agree on, but according to the concept of progressive or gradual disarmament, which is our concept, we should then envisage the adoption of rather more extensive measures which also concern the nuclear countries.

All these elements - Soviet opposition to a fair non-proliferation treaty, the desire of the non-aligned countries for a more extensive treaty covering also other issues, the slowness of the negotiations, and, finally, the extreme urgency of stopping the spread of nuclear weapons - have given rise to the idea of a provisional arrangement, a practical idea which after it has been debated in study groups has been officially put forward for the first time by the Italian government.

It concerns a temporary and controlled nuclear moratorium to which the non-nuclear states would commit themselves for a definite period and through unilateral decisions. The Italian Minister of Foreign Affairs outlined this proposal at Geneva on the 29th of July 1965, as follows:

"It is quite conceivable that the non nuclear countries might agree to renounce unilaterally equipping themselves with nuclear weapons for a specific length of time, it being understood that if their demands were not complied with during the time limit they would resume their freedom of action. In that way a respite would be given the anxiety about nuclear dissemination and moreover, a factor of pressure and persuasion would be created which could be brought to bear on the nuclear countries in order to spur them to conclude a general agreement, thus speeding up the process toward nuclear disarmament."

This idea received the support of several delegations in the Eighteen Nations Disarmament Committee. There were further elaborations by the Italian government and on the 14th of September, 1965 the Italian delegation at Geneva tabled at the conference the draft of a nuclear moratorium declaration.

The declaration which has been proposed is a unilateral manifestation of will. It does not have the character of a contractual commitment. Nevertheless, according to the current opinion it would have full force of law committing for a certain line of conduct the countries subscribing to it under the conditions provided for by the declaration itself.

The declaration for its unilateral character might be worded in different ways, each country remaining free to choose the language best suited to it, provided that the essential is maintained. The Italian draft contains some of the elements considered essential, but is only an outline or a guide and not fixed and immutable model.

I will now very briefly examine the principal points of this draft declaration. First of all, the draft declaration recalls certain principles or obligations which appear to be fundamental. It is said that the governments issuing the declaration are convinced that an unilateral renunciation of nuclear weapons by the non nuclear states may facilitate and encourage international agreement to prevent the spread of nuclear weapons to halt the nuclear arms race, and to reduce nuclear arsenals, leading to general and complete disarmament.

The declaration indicates then the undertaking into which the governments signatory to the declaration should enter. It is stated that each government from the enforcement date of the declaration for a certain number of years will not manufacture or otherwise acquire national control of nuclear weapons; will not seek or receive assistance from other states in the manufacture of any such weapons; will accept the application of I.A.E.A. or equivalent international safeguards on its nuclear activities.

The word "national" with regard to control is important. This is in line with the well-known western stand which aims at preventing the creation of any new independent national nuclear center while permitting possible forms of co-operation or nuclear integration which will not involve that danger. So even if the declaration is issued by some non-nuclear countries of the western alliance it would not prevent them from setting up a nuclear sharing even during the period of the moratorium.

On the other hand, the safeguards which are required are also important because they give to the parties concerned the necessary security during the moratorium. This element of

control distinguishes our concept of moratorium from some other uncontrolled moratorium proposed by the Soviet government, and it complies with the general principle of the western countries that every measure for disarmament must be inspected.

Further, the draft states that the undertakings foreseen in the declaration enter into force if similar declarations are issued by at least a certain number of states within six months from the signature of the declaration. Three months before the expiration of the moratorium the signatories of the declaration will consult in order to prolong it, considering the progress which has been made toward international agreement to prevent the spread of nuclear weapons or to halt the nuclear arms race and to reduce nuclear arsenals.

The signatories of the declaration reserve all freedom of action if this progress is not satisfactory or if a non-nuclear state in any way acquires national control of nuclear weapons.

As you have seen, our draft declaration does not indicate the duration of the moratorium and the number of countries which would have to sign the declaration in order that it could enter into force. We believe it is too soon to make official proposals in this connection. However, with regard to the duration of the moratorium I think it should not be too short because in such a case the moratorium would not have the intended stabilizing aspect. Nor should it be too long because its effectiveness as a factor of pressure would be weakened. Between three and five years would be an appropriate duration.

As for the second program, the number of states issuing the declaration has perhaps less importance than their nuclear capability at the time of the assumption of their undertakings. This program would have to be approached in a flexible manner, on a practical level, and dealt with through prudent arrangements and appropriate soundings carried out carefully chosen intermediaries.

Finally, the draft ends with an invitation to all states nuclear and non-nuclear, to respect and observe the principles of the declaration and encourage their observance.

Having outlined what the moratorium according to our draft declaration should be, I should like now to state more precisely the idea upon which we base it, to give some explanation of what the moratorium is not, with what the moratorium should not be confused.

Firstly, the commitments which we envisage would not constitute a simple and platonic declaration of goodwill, of good intentions. As I have said already, the Italian draft provides a juridical although unilateral instrument accompanied by the necessary safeguards for application. Experience in uncontrolled moratorium for nuclear tests is a sufficient precedent in itself for advising against an uncontrolled moratorium. The value of the moratorium would disappear if we provide for uncontrolled commitments based solely on the good faith of the parties concerned.

Secondly, we must not confuse the idea of the nuclear moratorium with denuclearization. Indeed the moratorium would in no way affect the deployment and installation of nuclear weapons belonging to the nuclear countries everywhere they will be necessary to maintain the military balance.

The moratorium is, therefore, not an equivalent of nor a preparation for the denuclearization of certain zones - Central Europe, the Mediterranean or the Baltics. But clearly it would not impede - it would even favor the implementation of the project now under examination for denuclearization of certain continents.

Having thus clarified the contents and the characteristics of the moratorium project tabled by Italy, we may now wonder whether and to what extent this formula is valid and could help overcome the difficulties encountered in a treaty of non-dissemination as I have just indicated; whether, in other words, the moratorium is actually easier to realize than a contractual commitment.

As regards the Soviet's attitude, they have already declared that they will find the unilateral declaration inadequate and insufficient because, as I said, it makes Atlantic nuclear sharing still possible. But as it involves an initiative by non-nuclear countries and concerns them alone, the Soviets would be in a bad position to oppose it.

Moreover, the moratorium must seem a step forward even in the eyes of the Soviets. The declaration would establish self-imposed limitations non-existent at the present time without the Soviet Union being obliged to commit itself or to accept them explicitly, and these limitations would also be to the advantage of the Soviet Union.

The declaration would, therefore, provide Europe with an additional element of security and stability without, however, in any way diminishing security and integration of the Atlantic Alliance means of defence.

Could not the declaration, furthermore, satisfy the claims of the non-aligned countries and correspond to the concept of progress in disarmament? If it does not give immediate satisfaction to these demands, at least they are recognized as valid and there is no hope that they may bear concrete results.

Thus the nuclear countries will have a reasonable period of time to successfully conclude, if they wish, their negotiations on nuclear disarmament while being aware that in the event of failure the non-nuclear countries may assume their freedom of action. The non-nuclear countries, therefore, retain an element of pressure and persuasion.

There are indeed reasons to believe, as discussions on this topic at the United Nations have shown, that many non-nuclear countries which would hesitate to renounce nuclear weapons forever if no progress were evident in the disarmament of the great powers would be more inclined to assume temporary restrictions which would retain full freedom of action for them later.

Under our formula this freedom remains total. The moratorium, however, if accepted by the principal countries approaching nuclear capability would have a prolonged stabilizing and persuasive effect. Of course, the moratorium is an easier solution to non-proliferation. It is a shortcut. If you will permit me, this is a contraceptive pill, and not sterilization. It is neither the ideal nor complete solution. There are in the moratorium elements of uncertainty which would not exist in a treaty but these elements of uncertainty are not devoid of an element of hope and optimism without which it would be futile to speak of disarmament. The moratorium, though a useful and valid solution, remains a subsidiary solution to be adopted, as I said, in the event of its being impossible to conclude a treaty on non-dissemination or of the negotiations dragging on in such a way that the delays entail serious danger of proliferation.

The question thus arises of knowing at what moment the moratorium idea, which is for the time being kept in re-

serve, could or should be launched in practice. We submitted the proposal at a time when last year the Geneva negotiations for a treaty, after the Soviet rejection of the United States draft treaty, seemed to be in a state of deadlock. The negotiations, encouraged by the United Nations deliberations, have now been resumed and, as I have already said, without being promising are not absolutely negative. These efforts must be continued while there is a ray of hope, with patience, tenacity and perseverance, while keeping the alternative solution up our sleeves. If at a particular moment, contrary to our hopes, it seems evident that the negotiations are doomed to failure or that dangerous delays are occurring, I believe that at that moment the non-nuclear countries should take the appropriate concrete initiatives within the limits of their proper responsibilities and their awareness of the claims of peace.

The interest which the idea of the moratorium has aroused at Geneva and at the United Nations and elsewhere and the welcome which many non-nuclear countries and the major nuclear countries of the world have accorded to it give grounds for hoping that this appeal will not be in vain.

Discussion following Cavalletti:

"The Italian Idea for a Nuclear Moratorium"

(Friday, June 24th 1966 - 11:30)

CAIOGERO: First of all, I would like to say that I am completely in favor of this Italian proposal and that I am very happy that the Italian Government has taken this active position in Geneva. I recall that a very similar proposal was suggested at a meeting some time ago in Italy. I mention this because it shows that this type of initiative was the obvious thing to do for a country like Italy, so that it was the one which came to mind to anybody who was wondering what a country in the position of Italy could do.

There is one point concerning this Italian proposal which I would like to raise. Perhaps it's still early to think of this, because there is still hope that it will not be necessary to actually implement it, if we will have a non-proliferation treaty, although, incidently, let me express my belief that even if we get a non-proliferation treaty the fact that the Italian proposal has been made will have had an effect in easying it. But anyway, should we really come to the point where the proposal has to be implemented, then I think there should be some more clarification of the legal problems connected with inspections and of the sanctions which might be taken if there is not complete compliance with the inspection requirements. As I understand it, the proposal envisages inspections to make sure that no nuclear weapons are being manufactured, and in this connection quotes as a possible model the IAEA safeguards. There are no inspections envisaged for the other undertaking - not to acquire national control of nuclear weapons - which would be very hard to inspect any way. As regards the first undertaking - not to manufacture nuclear weapons - the legal problems I foresee are those of possible small violations; in fact, if there is a major violation, namely if one country practically begins to build nuclear weapons, then, of course, this means that the country is walking out of the treaty, and this is a political problem. But there might be a situation where, for instance, a country has some nuclear installations which are private; and there might be legal problems concerning the fact that the inspections may interfere in one way or another with the working of these nuclear installations so that the people concerned just don't like to waste time with the inspectors. In the case of the International Agency of Atomic Energy, the safeguards - if I am not wrong - are connected with the fact that the fissile material is given by the Agency itself - except for a few exceptions - and therefore, the Agency could take it back if compliance were lack

ing. But if the moratorium is implemented in several countries this would not be the case. So what should happen if the inspectors of the International Agency for Atomic Energy are not completely satisfied, although they are not positively convinced that there is a major violation (in which case the problem would be related to the political level) I think, there should be at least some study at the present time of this problem.

I have another question which concerns the various definitions of proliferation, especially that given by the Western Powers. You have mentioned this in your talk and I also know the definition that has been given in Geneva several times but still I am not quite clear on this, let's say "numerical" principle; according to which proliferation occurs only if the number of groups having control of nuclear weapons is increasing. This concept is not clear to me. Perhaps you might expand a little bit on this point. In particular, I must frankly say that I was somewhat worried by the statement by the American representative at Geneva that within NATO it would not be considered proliferation, even if the American veto should be relinquished - although of course, it was immediately added that they have no intention whatsoever of relinquishing it. It seems to me that the maintenance of the veto is a very important threshold and that if within an alliance the country having the veto on the use of nuclear weapons relinquishes it, then indeed there is proliferation.

CAVALLETTI: Well, first of all I must say that the moratorium has not been invented by the Italian Government. I believe the moratorium has been elaborated in some private meetings of scientists, for instance by a private study group meeting in Switzerland last year. (And this shows, incidentally, the importance of private discussions and private studies, because in this way some new ideas are produced which later on can be taken on official ground). So, I think that the merit of the Italian Government is to have brought officially into the discussion of the Disarmament Conference this idea which was originally conceived through private studies and elaboration.

I must say as far as the safeguards are concerned that our outline, our proposal, is not complete. For instance, I have already stressed that the Italian Government has not yet taken a definite position indicating in the proposal the number of states which should adhere to the declaration to make

the moratorium effective; the duration of the moratorium is also not stated, although personally I think that it should be between three and five years. Thus, in the draft of the proposal we only state the principle that safeguards are absolutely necessary, and that they might be obtained through the Vienna Agency. But up to now there are no details as to how the safeguards would practically work.

So I think that in this field if in private talks and private studies some ideas could be elaborated, then this would be very useful in connection with the program. You said very properly: we can have minor violations. If there is a clear violation of the moratorium, a serious violation, the other countries which have undertaken the declaration will consider themselves free. But for the minor violations, which could be due only to lack of attention, I think it would be very improper if the other countries which have undertaken the declaration would say: Well we don't feel ourselves any longer obliged. In this connection I think you aroused a very interesting problem. I think there should be some international instance to which the reports should be presented so that they could take some step, to express some warning to the countries concerned. This is quite an interesting problem and if you can contribute to the solution of it, I would be very glad.

Now, the definition of dissemination, of course, is a very important problem. Our definition of dissemination is: the creation, the setting up of a new center which has at its disposal atomic weapons. And as to the veto of the nuclear country it would be maintained in any nuclear sharing agreement in the framework of the alliance. In the treaty - I am sorry I haven't the text there - in the draft of the treaty introduced by the American Government it is clearly stressed that no non-nuclear country will have the control of nuclear weapons. Then there is a definition of control and it says: Control means the right or the ability to fire nuclear weapons without the consent of a nuclear country. So the definition is very clear, it is the right to use atomic weapons. If some new country acquires this right we have dissemination. If the right to employ nuclear weapons is submitted to the veto of a nuclear country, there is no dissemination. The Soviet position is different. They say that any approach or any access to nuclear weapons is disseminatory. In other words they say: The Americans intend to prevent the use of nuclear weapons without the consent of the nuclear country, but they open the way to it. In fact, a non nuclear country could decide the use of nuclear weapons without this consent. I must say that the Soviet opposition to the Western treaty is more concerned with future arrangements than with the present. They say: You

give a possibility for the future.

You referred to the number of nuclear countries. Well, in the American treaty is an article, in which it is said that the number of nuclear countries should not be increased. The explanation of this language is this that in the framework of the Western proposals we want to keep two ways open. One is to have a certain collaboration, nuclear collaboration without control in the framework of the Western Alliance. The possibility that if a European Federation will be set up, this European Federation could have a tomic weapons. In other words, in the future - of course, very far in the future - but we can foresee such a situation - politically it is possible to set up a Federation in Europe. This Federation will be composed by nuclear and non-nuclear countries. But if a nuclear country has undertaken not to give its weapons to anybody - well, in this case this country would not join the Federation. If there is a Federation, one single center of will would be created, and this could be the heir to the nuclear weapons which were in possession of one or several members of the Federation. Therefore we said: We shouldn't increase the number of nuclear countries, meaning that if, for example, in the future France will join a Federation of six European countries, France will hand over her atomic weapons to the Federation. So France won't exist anymore as a nuclear country, the Federation will take her place; the number of nuclear countries won't be increased.

CALOGERO: The answer has been extremely clear. In fact, I was not so much arguing but rather trying to understand this position. I must confess though that still there has been this statement by the American delegate. Now, I have read it in the provisional records of the Geneva Conference and I do not remember whether this was given in one of the talks at the beginning which I think are written up beforehand or it was an impromptu answer. Also this might have been modified in the final record. However, the statement said that - well I am not quoting, of course - but the essence of it was that NATO now has nuclear power and that the Soviet Union should after all not make such a difference on what are the arrangements within NATO and should not consider proliferation even if the United States did relinquish her veto, although the United States have no intention, of course, of relinquishing it. But this seems to me quite at variance with what you have just said and it seems to me that it is a very basic point. In fact, I think that it is not very safe to envisage - to talk about this possibility at all. If the United States says: We will never relinquish the veto, however, even if we did,

that would not be proliferation, it seems to me that this scares the Soviets; in fact, it scares me a lot.

CAVALLETTI: No, I think that there must be a misinterpretation. Maybe what the American delegate said is this: that after all we are not here in Geneva to discuss nuclear sharing of the Alliance. We are here to discuss non-proliferation. What we do in the Alliance is our business. We do what we are allowed to do and now we can do everything because we are not bound by any treaty. The moment we sign a treaty, of course, we are bound by this treaty and we will conform our behavior to the terms of the treaty. But we are not discussing in Geneva the problem of Germany or of the Atlantic nuclear sharing. We have discussed the other face of the problem, the setting up of barriers against dissemination. The words of the treaty are clear. The treaty says that no new nuclear country will have the control of nuclear weapons and there is an article with the definition of what control means.

LAPTER: I listened with great interest to this lecture and I found that there is more than one point that is common to the Italian and Polish proposals for freezing the nuclear situation in Europe. It seems to me that it has to be underlined that this is practically the first proposal by the Western European country, while there were quite a few from the East, and I would like to mention among them the Polish proposals. It seems to me, for instance that the problem of safeguards and control is being incorporated into both plans. What disappointed me a little was the vision of the future, unless in some way. I misunderstood the speaker. My impression was that you envisaged for a very long time a division of Europe into two parts and into two security arrangements: NATO and the Warsaw Treaty. I think, however, that many people in my own country, as well as in other countries would see the future of Europe rather in terms of an overall integration than divided into two integrated parts set against each other.

Then I would like to put two questions before Your Excellency. The first one: If you set for this moratorium or freezing or whatever it would be called, a short period - three to five years - wouldn't it just be an incentive for some countries after that period, to get their own atomic weapons? And could not this period of moratorium be spent on preparations for this achievement under the disguise of working on peaceful uses of atomic energy? That's the first problem.

The second question is concerned with the nuclear sharing. As you know just the nuclear sharing forms the crux of the differences between East and West in talks on non-proliferation. So, don't you think that by incorporating this nuclear sharing idea into the moratorium, the idea that is unacceptable to the East, you are excluding the possibilities of the acceptance of your proposal by the East. And there is no use of putting forward plans unless they are acceptable to both sides. Moreover the question of nuclear sharing involves essentially only Western Germany, the G.F.R. And if you look at it from, say; the Indian point of view, you could perhaps say: well, we are being asked to resign from something, from acquiring an atomic capability, while Western Germany is already - by the 1954 agreement - bound not to produce nuclear weapons. So they are not giving up anything while we are. And then Western Germany - by nuclear sharing inside various arrangements inside NATO that were made and are being talked about is increasing by small steps her nuclear capabilities. So under your proposals of a moratorium you not only allow Germany to keep what she has already achieved but you still allow her to increase her influence inside nuclear sharing arrangement, while India, for instance, would stay frozen. The inclusion of this possibility of nuclear sharing - would thus make it difficult for such a moratorium to be accepted not only by the Eastern European countries - which have already declared their strong opposition to any idea of further sharing with Western Germany in nuclear strategy (planning, targeting) or any other form that could increase GFR's influence on the use of atomic weapons - but also by some other countries not belonging to NATO or to the Warsaw Pact. These are the problems which I would like to hear your opinion about. Thank you.

CAVALLETTI: Well, for the first point: the similarity between the Polish proposals and the Italian proposal. There is a certain similarity but there is a rather important difference. We consider in our proposal that nuclear sharing among allies should be permitted, and the Polish proposal doesn't accept any nuclear sharing.

Second point; the division of Europe: Well, the division of Europe is a fact. Now, we have two alliances; one in the East and one in the West. What is under examination is the non dissemination agreement; the conclusion of this agreement would not involve the liquidation of the alliances. We hope that later with the progress of general disarmament the alliances could be dissolved, but it is not possible that just through one single collateral measure the alliances be destroyed. So the alliances must be kept and this is the reason way we say: The alliances are continuing and we must be free to or-

ganize a nuclear collaboration inside our alliance under the condition that the collaboration won't give such control to any country which has not the control of nuclear weapons. As to the Federation, I mean, nothing is precisely stated in our draft treaty. There is only the way open to the possibility that the Federation be eventually set up, formed by nuclear and non-nuclear countries - it isn't said that the Federation should be formed of the six of the Common Market, or of the seven of the Western European Union - the idea is just Federation". I must say that in the present language of the treaty the word "Federation" is not even mentioned. It is only said that the number of nuclear countries should not be increased. So there is nothing in our position which could prevent a much broader Federation later on.

Now the situation of Western Germany - if Western Germany should accept the nuclear moratorium proposal. Well, Western Germany would give up something because at present she has renounced only to manufacture atomic weapons but not to acquire or to receive atomic weapons under national control. So I think that the unilateral declaration of non-acquisition - if accepted by Western Germany - would be a step further - but in a good direction and not in the bad direction. Of course, since the unilateral declaration contains the expression "national control", nuclear sharing is allowed. But I shouldn't say that this puts Germany or any other Western country belonging to an alliance - also Eastern countries - in a different position in comparison with non-aligned countries. This is the definition of a situation. There is a real difference between members of an alliance and the non-aligned countries, and these differences have been chosen by the non-aligned countries themselves. In Western Europe - and also in Eastern Europe - certain countries have freely chosen the position of being a member of an alliance, because they thought that this was the best way to protect their security; whereas other countries, the non-aligned countries, think that their security is protected and guaranteed without pertaining to an alliance. Once a non-aligned country has chosen not to be aligned, the consequence is clear. The non-aligned countries won't take part in any arrangement inside an alliance. I could not think that there is discrimination, nor that the non-aligned countries should feel themselves in an inferiority status. It is just the status they have chosen by their free will.

LAPTER: The main problem is the idea of nuclear sharing and here I think we disagree. The main difference between the positions of Eastern and Western Alliances and a difference

which is necessary to stress - is the attitude towards so-called nuclear sharing. And it was already expressed so many times that I wouldn't like to enlarge upon it. That is just the most important difficulty that blocks the road towards a non-dissemination treaty. There is no doubt about it, for it was stated more than once by representatives of my country, of the Soviet Union and of other Eastern European countries both inside and outside the Geneva Conference. I think your explanations most certainly are satisfactory in that sense that they make your position very clear - but that doesn't mean that they are therefore acceptable. Thank you.

CAVALLETTI: The trouble is that we can't really, at present, in the West, give a definition of nuclear sharing - which after all is a rather complex affair. We can't give a definition because nuclear sharing is under examination. But on the other side the Eastern Governments do not help very much because ~~they go~~ on repeating their points but refuse to answer our questions. We keep asking: what do you consider nuclear sharing? Do you consider nuclear sharing disseminatory? Even if it consists only in consultations? You recognize - your former delegate, the Polish delegate, did - that the non-dissemination agreement wouldn't dissolve alliances. What is an alliance? It is many things: collaboration, integration, and above all, consultation. Well, do you think that if we set up in the framework of the Western alliance some consultation on nuclear weapons - something of the kind of the McNamara Committee or even a bit more developed - but only consultation would you say that it is disseminatory? Do you think that if this is done in the Western countries - then there is dissemination and you can't accept the treaty?

LAPTER: It seems to me that some consultations between allies are just the result of being allied. There were and there are consultations among NATO members just as among Warsaw Treaty members. The problem as I see it is not of consultations but, that of acquiring by the GFR more responsibility in the nuclear strategy than she was given till now. It seems to me that by increasing, - in the framework of what is called in a very vague term nuclear sharing, - the power to decide, to increase GFR's influence in nuclear matters creates a real modification of the existing situation; that's neither freeze, nor moratorium. What we in Poland dislike is just the increasing amount of influence of Western Germany on nuclear matters. If this is to be incorporated in any plan it could make us only more reluctant to accept it; as is well-known the main difficulty in getting an agreement on nuclear non-dissemination between the

Soviet and American proposals, creates the problem of international sharing. Otherwise there exists full agreement that no more states should acquire nuclear capability. The difficulty arose out of this multilateral arrangement, sharing or whatever it would be called. To say it again, the main problem as I see it, is the tendency for increasing the influence of the non-nuclear states on the positive use of nuclear weapons. If it would be a demand leading towards decreasing the danger of the use of atomic weapons, - for instance, if the participants of NATO, if all the members of this organization, GFR included, would ask for the power to veto the use of atomic weapons - we would certainly see it as a positive step. My own country - as everybody knows - doesn't want to have any atomic "sharing". Therefore with clean conscience we could ask to stop the increase of nuclear possibilities and capabilities of Western Germany, which is the third industrial power in the world, with real capabilities to turn in a very short time in to a nuclear country. So it seems to me that this important point should be taken into account by our partners from the West when they are putting forward some proposals and want them to be accepted by the East.

CAVALLETTI: You know the requirements of the West are two: the first is to make a treaty of non-dissemination; and the second is to keep the Western Alliance alive. So we would be very glad if we could make a treaty which will meet both requirements. As for nuclear sharing there is what we call - using these rather peculiar words - consultation nuclear sharing and hardware nuclear sharing; hardware is the word that is used to denote in a certain way a physical nuclear collaboration. It would be very useful, I think, to know if the Eastern countries will consider disseminatory also a consultative nuclear sharing. But I was very glad when I heard you say that you considered consultation as quite natural in the framework of an alliance. This is just our point of view and I think that you must also have in the Warsaw Pact a certain amount of consultation about the use of weapons, conventional and nuclear. I think, it could be useful to have some clear statement from the Eastern side that the consultation on nuclear matters is not considered dissemination. It could be very helpful to us. But in spite of all the questions we have asked, we never had an official reply in the Conference. Moreover, it should be kept in mind that the Western Alliance is an open one; we don't keep secrets, if we have a consultation we must have it publicly.

STONIER: I would like to shift away from the East-West problem to the North-South problem and I would like to ask two questions. One is: what do you think are the probabilities of Israel and In dia joining the moratorium? The second is: You made the statement that the treaty was aimed primarily at those countries which are coming close to a nuclear capability. But one wonders whether in the long run perhaps the most significant aspect of this proposal might be all the non-nuclear countries sign it. In fact, it may well be, that because there are stumbling blocks elsewhere, we may need a long period of restraint. As you mentioned during the coffee break - the whole thing will boil down to a question of East-West trust. We need at least another five or ten years for this trust to become sufficiently established. In the meantime, the moratorium might be a very good check on the rest of the world.

CAVALLETTI: Well, about the situation in Israel and India in relation with their neighbors, I think we have no special indication but we think that the fact that we put safeguards in the moratorium should help. I mean, what we must try is to have a simultaneous acceptance of the moratorium by countries which could be in contrast. I think that it is difficult to foresee that Israel will accept the moratorium if the Arab countries won't accept it. I mean, what we must do, once the idea of a moratorium has taken shape, is to set up a machinery in order to have a simultaneous acceptance of the moratorium by countries which have reasons to fear one another. I don't think we could have a conference because the Arabs wouldn't accept to sit with the Israeli but one should approach them separately in order to have a simultaneous acceptance of the moratorium.

Well, as for the countries having nuclear capability or not, I think that, of course, if all countries - even those not having any nuclear capability - accept the moratorium, that's very good. And I think that the fact itself, that a number, a large number of non-nuclear countries even if they are not approaching the nuclear capability, accept the moratorium, will exert pressure on the others. But you know, we can foresee that in the next three, four or five years a certain number of countries could become nuclear. If these countries, which could become nuclear, would not have great importance. Suppose we have one hundred countries accepting the moratorium except India; Israel, Sweden and the Arab countries, then the moratorium would not be very serious. I am sure that if a large number of countries, also among those that are not yet approaching nuclear capability, accept the moratorium, the pressure will convince the others to accept it also. But, of course, what is really

important is that the moratorium be accepted by about ten countries which are not very far from nuclear capability.

AMALDI: May I say a few words? Well, I should say that in principle I like the idea of the moratorium as it has been presented by Ambassador Cavalletti and as proposed by the Italian Government. As was mentioned before by Calogero a very similar idea had been discussed in the Italian Pugwash Group. I should however, say that I am really a bit worried about what you said. I understand that when there is an alliance between a few countries there should be a certain consultation and so on. But if we think that this is a step toward a possible situation when there is a federation, confederation, what you want, of European states, and we foresee from now that this new organization of European states has atomic weapons, just from now - this worries me very much. Very much, because I think that such a step or such a view for the future goes in a direction which will in some way make it more difficult to reach an agreement. I am very much worried. I would prefer to see some step which is really facilitating the reaching of an agreement. I am worried. I am worried because - it has been mentioned many times - if this should be the case probably the most powerful country in Western Europe would be Western Germany and at a certain moment we would find that probably who decides - or who has a great weight, a great influence on the final decisions - is West Germany now, I have nothing against West Germany, but I am frankly, afraid. So while, in principle, I think that the idea of a moratorium is a good idea because it gains five years, which may be doubled, during which tension is reduced, I am afraid if the sharing goes beyond consultation. I really don't like it and I feel that it is a very very dangerous step. That's my personal opinion, of course. As a private person as a citizen of this country, I am really very concerned.

CAVALLETTI: I am glad you agree that on a voluntary basis something can be achieved in nuclear disarmament and I will also add this: I think that something can be achieved in nuclear disarmament outside the nuclear countries, without the participation of nuclear countries; because in certain fields in certain sectors I think no nuclear country can really contribute directly to diminish the nuclear dangers. Our proposal was an example. The Swedish "detection club" initiative even though I don't know how it will develop, is certainly another example of an initiative, taken by a non-nuclear country in order to limit the nuclear dangers. The Latin American Conference for the denuclearization of the Latin American Continent is another example of the efforts of non-nuclear countries to limit the dangers. There is also a certain trend in Africa to get an agreement to denuclearize that continent. There are many unilateral initiatives of non-nuclear countries which can help very much.

Professor Amaldi is worried about a nuclear federation. Well, I think everybody could be but we don't know how the world situation will be in the future. The federation is to be taken into account in the framework of the treaty, not in the framework of our moratorium proposal. The moratorium proposal will certainly not extend for such a long time to reach the moment of the European Federation. As for the treaty whose duration is unlimited, yes, there is a clause, the European Clause, which permits the setting up of a nuclear European Federation. But you must take into account that the treaty has no time limit, as it has been proposed by the Soviet delegation - or by the American delegation - because on this particular point the two drafts do not differ - the treaty is for always. Then if you have to put a signature to a treaty of unlimited duration, which engages us for always, you must keep open the possibility of a nuclear federation. We can foresee a situation in which France or England are ready to get into the federation, but having atomic weapons, they do not know what to do them. They would be confronted with the alternative: either to destroy the atomic weapons or to hand them over to the federation. And I think that it is rather wise to keep open this possibility in the framework of the treaty. We don't know which will be the situation in many years. We hope that this European Federation could be achieved without nuclear weapons but I think that a responsible government must have open the possibility that the Federation has nuclear weapons.

AMALDI: May I say just one more word. I would like very much to see a European Federation. I am not sufficiently prepared to say what form, legal form, it should have, but some combination of Western countries may be extended also to other countries and that's what I prefer, I should say frankly. But I would like very much to see this spirit of unilateral decision that we were mentioning before. A certain number of countries that are ready now and willing to say: well, I renounce for five, maybe ten, maybe more years, not forever, nuclear weapons. Now in the situation where each country has a certain independence inside the alliance, I would like very much to see the spirit extended to this new body. That's what I say to the Federation or Confederation or whatever it is. I would like to see this at least - well, as a hope. Maybe you say it is unrealistic but on the other hand we often see that one should leave some time also to think about utopias because at a certain time the utopia becomes reality if the people believe; because very much depends on what people believe.

PILLAI: Do you think, Sir, that India would sign the non-proliferation treaty without participation of nuclear China, since the nuclear threat from China is felt by India?

CAVALLETTI: You know that India has taken a very open position in Geneva and has spoken only very much in favor of the non-dissemination treaty. But India is one of the countries which have stated that the nuclear countries should make some sacrifice, should stop the nuclear race and should give some guarantee in favor of the security of the non-nuclear countries. I think that if the two major powers, the super powers, will reach an agreement on the treaty, it will be very difficult for India not to sign it, because this treaty has a tremendous importance as a political rapprochement between the Soviet Union and the United States. And in a certain way this kind of rapprochement is very much in favor of India. The fact that the Soviet Union and the United States collaborate together in a non-dissemination agreement can be for its repercussions on the Soviet - Chinese relations very important, and in a certain way the treaty will reinforce the position of India. But India has also asked for some guarantees. I must say that a number of countries have said: If we give up the right to manufacture or to acquire atomic weapons we must have some guarantees from the nuclear countries. This question of guarantees is a rather complicated one because these countries are non-aligned countries. The moment they accept a real solid guarantee by one or the other nuclear of the nuclear countries they become aligned. But some formula can be worked out. So I think that if the non-dissemination treaty is agreed upon by the two major powers, we should have certain kinds of guarantees which could be elaborated either in the treaty itself or in the framework of the United Nations.

FEHIMOVIC: In the course of July 1965 the experts of the NATO Powers discussed among themselves in Geneva the possibility to prepare a joint draft but the United States in August submitted their own draft. Lord Chalfont and Mr. Foster openly discussed a theoretical disagreement about loopholes. Canada asked for guarantees and finally your country proposed its own unilateral non-acquisition draft. Does it mean, Ambassador Cavalletti, that the Western countries have different approaches to the subject of proliferation?

CAVALLETTI: I think there is a well coordinated action. As you know the Americans have tabled a treaty which has been supported by the other three delegations, and our proposal for the moratorium has, of course, been coordinated with the other Western delegations. The four delegations have regular meetings of coordination. In one of the meetings I have informed the allies that it was the intention of the Italian Government to take the initiative of the moratorium, and the others have agreed. Great

Britain and the United States, being nuclear powers, were, of course, in a certain way outside our proposal. Canada was in full understanding. That's how we proceeded in coordination with the four delegations. The collaboration in Geneva is usually very close among the four and very satisfactory.

BERTOTTI: I have two short questions. The first is really addressed to Professor Lapter. Let us suppose that a number of Western and non-aligned countries sign the moratorium agreement. Do you think - in your opinion - that Poland would consider joining it?

The second question concerns the role of safeguards in the proposal of a moratorium with which, of course, I wholeheartedly agree. But it seems to me that the safeguards question is a rather difficult one and a weak point. If the system of safeguards of the International Atomic Energy Agency is applied it is possible that the moratorium will encounter many difficulties. In fact, it has been stated that one of the reasons why the member nations of the Agency refused to get nuclear fissile material from the agency is because this would have involved acceptance of its rather stringent safeguards system. If the nations which sign the moratorium accept the safeguard system it might mean that the whole nuclear industry of the nation concerned would be subjected to very stringent requirements. It seems to me that there is an alternative here. A new system which is not so strict might be developed or perhaps - and this is my question - is it conceivable to have a moratorium with no inspections? Because after all, building up a nuclear armament is not a simple undertaking and involves a large amount of money and personnel. So it is very difficult to do it in secret.

LAPTER: I don't know what would be the position of the Polish Government in this problem. I am talking only for myself. My guess would be that Poland, accepting the existence of the Warsaw Pact Treaty as a major safeguard against the dangerous development in the GFR, certainly avoids any step that could endanger the strength and unity of the Warsaw Treaty organization. So if you ask the question: Will Poland join such a treaty of moratorium while other Warsaw treaty members will not, the answer would be "no"; because under the circumstances of signing it we would lose more than we could gain. Here I wish to say that I fully agree with what was said by Professor Amaldi, about the need for European unity, because I believe rather in the necessity of uniting all of Europe than in keeping this small continent divided. So, going back to Professor Bertotti's question: if it could be put another way, for instance: what would be Poland's position if NATO countries would put before the Warsaw Treaty countries a proposal that could be acceptable by them, then I can assure you that Poland will say emphatically "yes".

CAVALLETTI: The reaction of the Eastern delegations to the Italian proposal was the following: they said: well, your proposal is a good thing, but not enough. It is good because even in relation with Germany it is an improvement. Germany has now given up its right to manufacture atomic weapons only vis-à-vis the Western countries, in the framework of the Western European Union; through the unilateral declaration of moratorium, Germany would be engaged not to manufacture nuclear weapons towards everybody, and it would also undertake not to acquire atomic weapons under national control. Of course, the Eastern delegations including the Polish delegate - said that this is not enough, because the moratorium should also prevent nuclear sharing. This is the position of the Eastern delegations. They are not opposed but they say: it is not very useful not very important; it is not complete.

As to the safeguards - you put the question of safeguards. I think the question of safeguards should be better elaborated exploring if very heavy safeguards are necessary or whether we could also foresee some lighter safeguards - we don't know. I wonder also whether the Vienna Agency has enough personnel to carry out all controls, if this treaty is realized. But some sort of effective safeguards, I think are essential. I don't think Israel will give up the right to manufacture nuclear weapons unless it is sure the Arabs will do the same; and viceversa. The same consideration is valid for India and Pakistan. I think safeguards are essential, but maybe some formula - not so heavy - could be found.

MANFREDINI: This is perhaps a silly question: In this discussion there was a lot of wonder of what the position of China could be in a general agreement of other countries. And I should like to know in the present situation - China not being recognized by many Western countries - is there any diplomatic means to know the opinion of China besides just reading the papers or to start a discussion with China?

CAVALLETTI: There are some means, I suppose, but sometimes they are not so good. In the United Nations there are a few delegations, particularly the Albanian and Cambodian delegations, which are supposed to interpret the Chinese thought. But we are not so sure, because last year we realized that these delegations were not very well informed about the Chinese position. They supported the International World Disarmament conference. You know that at the United Nations last year there was a proposal in favor of a World Disarmament Conference. The delegations which in a way are the spokesmen of China were in favor of it, but, the moment the resolution in favor of a World Disarmament

Conference was voted, there was a broadcast issued by Peking in which it was stated that China wouldn't join any disarmament conference and that China was against all initiatives of this kind. So I think it is not very easy to be aware of the Chinese thought. Then there is another channel, namely, the conversations between the American and Chinese ambassadors in Warsaw. I think through this channel they can exchange some views. There was a rumor that in these conversations the Americans proposed to give up the right to use atomic weapons first against China if China would join the Moscow Treaty. But that is only a rumor. All together I think that the best way to be informed is to listen to Chinese broadcasts!

AMALDI: Any other remarks? Well, I thank again Ambassador Cavalletti for having not only presented two lectures in which he has given us an idea of what is the official Italian point of view but also for having answered a lot of questions - there were so many of them from many persons. I should say as the director of this School that, since the official point of view of Italy has been presented so nicely, and we had the pleasure of listening to points of view - if not officially but unofficially - from other Western countries and from Poland, I regret even more now that our Russian colleagues were not able to be here, in spite of my repeated letters, to present their point of view.

CAVALLETTI: Thank you again, Professor Amaldi, for your invitation. I must say that I didn't always state the official point of view of the Italian Government. Sometimes, I did, but sometimes I also stated my own personal opinion. So don't take everything I have said as official, because a great part of what I said was just a personal feeling. Thank you again.

The U.N. and PeaceKeeping

William Epstein: Tues. 21/6/66 - 11:30

Irrespective of what progress it makes in implementing the economic, the anti-colonial, the social, the legal and the other provisions of its Charter, unless the United Nations succeeds in maintaining international peace and security, the United Nations will not continue to exist. This is its main purpose and the most important in its activities.

The League of Nations broke down for many reasons as you know. One of the reasons given for the failure of the League is that it had no international police force; so when the UN Charter was signed in San Francisco, specific provisions were made for international forces at the disposal of the Security Council, which is the body having primary responsibility for peace and security. In Chapter VII of the Charter, dealing with Enforcement measures, specific provision was made for economic, military and other sanctions, for the creation of a military Staff Committee, and for forces to be placed at the disposal of the Security Council to enforce peace and security. It was also provided that decisions of the Security Council under Chap. VII would be binding on all states. It is strange that these specific provisions of the United Nations Charter, which were intended to rectify, or remedy defects in the League of Nations system by providing international forces to deter and prevent breaches of the peace and acts of aggression have never been applied and remain unimplemented. Except, perhaps, for its decisions regarding Rhodesia the Security Council has taken all other decisions not under its enforcement powers under Chap. VII of the Charter, but rather under Chap. VI, where its decisions are not binding but are recommendations to the parties. Despite some contrary opinions, most students of the United Nations feel that, although it has not succeeded in preventing all conflicts or restoring peace in all cases, it has, nevertheless, operated with considerable success in halting wars or armed conflict.

Even in the case of Korea in 1950 to 1953, where a United Nations force was assembled to defend South Korea from an attack by North Korea, the decision of the Security Council was taken under Chap. VI of the Charter and was only a recommendation to the parties. The UN Forces in Korea were not under direct UN Control, since the United States of America was named in the Korean resolution as the United Nations' Command. The Korean case is also unique as the only instance where an actual fighting force, a police force, was set up with the

specific function of taking military action in order to restore international peace and security. What the United Nations has tried to do in cases of armed conflict is to call on the parties to end the hostilities, to achieve a truce or cease fire in the fighting, to freeze the situation and then to restore a peaceful situation by encouraging the machinery of pacific settlement to try to bring about a political solution of the dispute. The United Nations peace forces, have sometimes been compared to a fire brigade that goes out merely to put out the fire and leave it to other people to determine what was really the cause or what has to be done to restore the situation or prevent a repetition.

There are two kinds of peacekeeping operations and all kinds of intermediate blendings between them. One kind is known as an observation mission and the other kind is actually a peacekeeping force. The observation missions are usually small and consist of a group of military observers (I think the largest group consisted of some 700 military observers on the Israel-Arab truce or armistice line). The task of the observers is either to supervise an armistice or truce or, more often, to supervise a cease-fire agreement. As I said, the first thing the UN has tried to do in a case of conflict, was to attain a ceasefire to stop the fighting in order to prevent the conflict from spreading or escalating. Then the United Nations sends observers there to check on the cease fire and to act as a brake on those who might want to violate the cease fire. While, in almost all cases there are some violations of cease fire agreements, nevertheless, the fact that you have impartial international observers there, the fact that you have machinery and an instrument for hearing and investigating complaints about violations and making reports on them, makes it possible on the whole, to preserve peace and security.

The second kind of peace keeping operation consists in having actual military forces not as fighting forces but as peacekeeping forces. Their purpose is to put themselves between the opposing hostile sides or forces, to keep them apart and to establish situations and areas of peace. The number of such peace keeping forces has varied from some 3500 in Cyprus to as many as 20,000 in the Congo. These forces, unlike those in Korea, were true international forces in the sense that they came under the direct jurisdiction

of the Secretary General acting on the instructions of the Security Council and of the General Assembly. Because of the difficulty in agreeing on every little specific step and on everyday to day administrative or operating instruction in a political or deliberative body like the Security Council or the General Assembly, the tendency grew to give the Secretary General a broad mandate to go ahead and implement, to take charge and supervise, the work of the peace keeping forces.

Since these peace-keeping forces were established by the Security Council under Chapter VI of the Charter, where the decisions are merely recommendations, the forces could only go to countries or areas of fighting with the full and free consent of the countries whose territory was involved. Although it is not quite so clear, I think that the majority opinion also holds, that can only stay there with the full and free consent, the continuing consent of the government concerned. But this is an area which is still somewhat in doubt and there are some suggestions, perhaps only minority ones, that holds that once the Security Council, or the General Assembly, with the consent of a country, has authorized peace-keeping forces to go there, that it's not possible for the country by itself to throw them out without a further decision by the Security Council or General Assembly, because all sorts of international, legal and political facts evolve from the original authorization and consent. Fortunately, however, that specific situation has not arisen and has not had to be faced. Up until now, wherever United Nations observation missions or peace-keeping forces have been sent nobody has wished to carry placards or paint on walls "UN go home". There is a general acceptance of the objectivity, of the impartiality and of the effectiveness of the operation of the United Nations forces.

Now I would like to give a quick, very brief, run-down of some of the main peace keeping operations. In the very early days of the United Nations immediately after the war, there were troubles in Greece and Greece appealed to the Security Council. In 1947 the Security Council decided to send observers to Greece. They were under the supervision of a United Nations' Committee, the Balkan Sub Committee and not of the Secretary General. Then in 1947-48 the United Nations sent observers to Indonesia; these were chosen from the nationals of Consuls in the area; they were a very, very small number, I don't think they ever

exceeded 50-100, maybe 150 at most. It's difficult now to recall really the amount of international tension in the Greek situation and Indonesia, but at the time they were very, very tense and dangerous situations. Nevertheless, the interesting thing is that these little bands of observers could command respect and obedience, and could help to bring the temperature down and bring the situation around to some form of stabilization.

In the Palestine case in 1948, the United Nations first sent in a few observers to supervise the truce or cease fire. In 1949 they became a permanent body recognized in the three Armistice Agreements established between Israel on the one hand and Egypt, Jordan and Syria on the other. The parties accepted the United Nations Truce Supervision Organization as a permanent observing body. I think it would be accurate to say that despite all difficulties and problems, this is one of the most successful international operations. In that very tense and complicated area where feelings are often very high, to have succeeded on the whole, to maintain peace there, is, it seems to me, an enormous entry on the credit side of the United Nations peacekeeping ledger. Another case was in Kashmir, where observers were also sent by the Security Council in 1948, but they are called UMOGIP (United Nations Military Observer Group in India and Pakistan). In Kashmir and on the Indian-Pakistani frontier, where relations and the situation is also tense and in danger of breaking out into armed conflict, the observers have, with only rare exceptions, managed to keep the situation fairly well stabilized and peaceful.

The only case where the General Assembly rather than the Security Council established peacekeeping forces was in the case of Suez. In 1956, when there was fighting in the Sinai Peninsula and Suez between British, Israeli and French forces against Egypt, the General Assembly created the United Nations Emergency Force (UNEF) consisting of some 6000 men. Its instructions were to intervene between the contending armies in order to bring about peace and to bring about a halt in their military activity there. It was an amazing operation, the first time that anything like it had ever been done in history in this way. Within a period of something like two weeks, Secretary General Dag Hammarskjöld managed to assemble an international force

and put them into the area wearing the UN blue helmets (that's why they are called 'les casques bleus'). This little band of some 6000 men under General Burns went and placed themselves between the warring armies, the British, the Israelis and the French on one side, and the Egyptians on the other. This was a very dramatic development and a most successful operation that restored peace to the area and prevented the possibility of a larger conflict. Now this great effort cost the United Nations something in the area of 20 million dollars per year for a number of years. If you compare the amount of money spent on the actual fighting there with the military budgets of the warring parties it is really so minuscule as to make any comparison almost ridiculous. In 1958 when Lebanon was threatened by the possibility of outside infiltration, the UN also sent an observer group there, called UNMOGIL, the United Nations Military Observer Group in Lebanon. And here again just a few hundred observers managed very quickly, in a matter of weeks, to stabilize the situation, which some people feared could develop into a war, one of the real dangers of these small conflicts is that it is always possible that the big powers may be drawn into them.

The original idea under the Chapter VII of the Charter to establish UN police forces, was that the major powers would contribute armed forces to maintain or restore international peace. The whole operation was to be carried out on the basis of the agreement of the big powers. Unfortunately, the big powers, the permanent members of the Security Council, just could not agree; the armed forces envisaged by Chapter VII of the Charter were never established; in fact, the great powers even gave up trying early in 1946 or 1947. On the other hand, the small peace keeping forces drawn from the middle or the little powers were set up in the cases I have mentioned and quickly brought about some pacifications; they moved into the vacuum or the breach and thus made it difficult or impossible or unnecessary for the big powers, who have interests even in little incidents or disputes anywhere in the world, to go in or become directly involved themselves. If once the big powers go into these tense areas of conflict with their forces, then the situation becomes very very much more dangerous. But if the United Nations can fill the vacuum and go in there and thus make it possible for the great powers to stay out or more difficult for any of them to go in, then the dangers of the conflict and the

and the possibilities of halting the actual fighting and of stabilizing the conflict and of working towards a peaceful settlement are infinitely greater.

The largest operation that the United Nations ever undertook was in 1960 in the Congo. There the Security Council set up what they called ONUC for the French initials "Operation des Nations Unies au Congo". During this operation, the United Nations forces and the Secretary General became the objects of criticism by the original Congolese government from the Soviet Union and also from some western powers, particularly Belgium, France and the United Kingdom. This was really a large operation with as many as 20,000 troops at one time from some 20 different small countries. But here there was an extraordinary situation; there was not only the ordinary question of conflict between contending factions and groups, but in the Congo practically the whole Administration of law and order collapsed, and the United Nations moved in, not only to maintain international peace and security, but also to assist the government of the country in maintaining law and order, internal law and order and to help the ordinary civilian administration of the government to continue in being. The whole country was on the verge of anarchy and in danger of splitting up into a number of parts. Katanga, for example, attempted to secede and set up a separate state. This operation cost the UN about one hundred million dollars per year, which again is a very small sum when compared with the figures we have heard here of 150 or 170 billion dollars a year spent for armaments. So to spend one hundred million dollars per year is really an insignificant sum for such an important task, not only in keeping the big powers from active confrontation in the area, but in preserving the country, in maintaining law and order, and preserving human life. It was no part of the UN mandate to wage war; their mandate was to go in there to create peace, to re-establish the peace. Sometimes the UN forces were in a sandwich between contending forces and sometimes they were openly attacked and fired on. They are however authorized to defend themselves when attacked; they must have this right and they carry as a rule only small arms but in the Congo they often carried more than small arms; they had armed vehicles, air support and other things and towards the very end, I think it was in January 1963, they

did actually become engaged in actual fighting with regular or irregular forces to prevent these forces taking over certain territories, from which they had previously been excluded. This is one of the few cases where UN forces were even for a very short period of time engaged in actual fighting. Finally in 1963 the peacekeeping operation was completed and it was possible to withdraw the UN forces.

In 1963, another unusual and unique event occurred which in a way comes under the heading of "peacekeeping". You will recall that in 1948 when Indonesia was created as an independent state, the governments of Indonesia and the Netherlands agreed that what came to be known as West Irian which at one time was known as Western New Guinea, should be dealt with later. In 1963, after much arguing and contention, they agreed that West Irian should become part of the territory of Indonesia. In order to assist this transition and to make sure that it would happen without any threat or breach of the peace, it was agreed by both parties, that the United Nations should set up a United Nations' Temporary Executive Authority (UNTEA). During the transition period which lasted some six months or nine months, the United Nations actually acted as a sort of governing body. It was assisted by a force of 1500 men, drawn from Pakistan, in order to preserve law and order during the transition period. And for the first time a new principle was adopted; as a result of the dispute about the financing of UNEF and the UN force in the Congo, it was agreed by the parties that they would share the cost of the operation. Accordingly Indonesia and the Netherlands reimbursed the United Nations for the cost of the UNTEA operation. However, this case constituted a matter of the UN becoming the administering authority of the country for the purpose of insuring a smooth transfer of authority rather than a typical peacekeeping, or peace observation operation.

In the same year, 1963, the only really clear failure of the United Nations in the peacekeeping field occurred in the case of the Yemen. A United Nations Observation mission in the Yemen was set up by agreement between the parties, between South Arabia, the Government of Yemen, the fighters in Yemen and the United Arab Republic. Observers were sent there together with a United Nations' representative and their job was to observe the cease fire which had been negotiated. In this case, after a few months they actually reported their inability to carry out their peacekeeping mandate. This is the only case I know of that resulted in the absolute failure of a United Nations' peace keeping mission.

Then we come to the Cyprus case in 1964 and here there were several new precedents established. Once again a peace keeping force that reached about 6000 men, was set up by the Security Council of the United Nations to help the peace in Cyprus. The largest element in this peace keeping force was the contingent of troops of the United Kingdom. This was the first time that a great power, one of the permanent members of the Security Council, had its forces included in a peace keeping mission. This was again due to the fact of agreement of the parties, not only of the two contending factions in Cyprus but also the agreement of Greece and Turkey. Secondly, instead of giving an indeterminate mandate, the force is kept there for repeated periods of three or six months. This was due perhaps to the fear that once you bring in the United Nations peace-keeping forces, the tendency is for them to stay on. Since questions of peacekeeping involve the maintenance of international peace and security, international responsibility flows from it and it's not a responsibility which can be lightly started or ended. In this case, a new principle was adopted to give the UN force very short period of three months or six months. Before the expiration of each period of three or six months, it was necessary to obtain a renewed mandate from the Security Council. In the Cyprus case there were three new elements: a mediator was sent out to attempt political mediation, while the UNFICYP (UN Force in Cyprus) kept the peace; a great power contributed troops to the UNFICYP; a very short period of time was fixed for the peacekeeping operation, and the peace-making mediation function proceeded side by side with the peace-keeping function. And in this case because of the difficulties over the financing, they adopted a new principle of voluntary assessment. The force is paid for entirely from voluntary contributions from members of the United Nations. Because of the difficulty in obtaining sufficient voluntary contributions, the forces were progressively reduced from 6000 to, I think now, some 3500 men. But this little band of 3500 men, because of the authority and prestige of the United Nations and the support of its members, has managed to keep the peace in Cyprus.

The last instance of a United Nations peacekeeping mission, and this was a more successful one, was that of the observation mission sent to India and Pakistan in 1965. It was called UNIPOM (UN India-Pakistan Observation Mission) and was a separate mission from UNMOGIP which

continued its observation task on the cease fire line in Kashmir. In the Summer of 1965 fighting broke out in Kashmir and soon spread to the border between India and West Pakistan with forces of the two countries entering each other's territory outside of Kashmir. The Security Council called for a cease fire and the withdrawal of their troops behind their own boundaries and requested the Secretary General to provide the necessary assistance to supervise the cease fire and withdrawal of forces. The parties agreed to cease fire and the Secretary General sent out the UNFICM consisting of about 90 observers to India and Pakistan from 10 of the smaller and middle powers. Although there were charges of violations of the cease fire by each side, nevertheless the cease fire did not collapse and, as a result of action both by the Security Council and outside of it by the great powers, the dangerous flare up was kept under control and brought to an end. In this respect, the UN's efforts were greatly helped by the Tashkent agreement.

As I said, there were some 26 countries in all which at one time or another had supplied forces to the United Nations peace observation or peace keeping missions and all these forces had been supplied voluntarily by these different countries at the call of the Secretary General and with the consent of the host governments which had agreed to accept them. As a result of this experience, the idea developed of having "stand-by" forces; the initiative here was taken by the Scandinavian countries, Canada, and the Netherlands. The Scandinavian countries, Canada and Ireland, I think have been participants in every or nearly every peacekeeping operation of the United Nations from the time they became members of the Organization. These countries decided to earmark special units of their armed forces to serve at the call of the United Nations for peace keeping missions. It is a very comforting thing for the Secretary General to be able to know that he can get these forces and really quickly because when they are needed they are needed very quickly. Both in the case of the Suez and the case of the Congo, UN forces were on hand within two weeks, which is a remarkably fast operation, considering all the complexities. There have been several attempts in the United Nations to get resolutions through, for keeping "stand by" forces on a more or less continuing basis but the Soviet Union, France and some-

other countries say this concept of "stand by" forces is contrary to the Charter, that the Charter says that armed forces must be supplied under Chapter 7, Articles 43 and 47 through the Security Council and the Military Staff Committee. It is worth recalling that all of these peacekeeping missions have been established by the Security Council, with the sole exception of UNEF (the UN force in Sinai and Suez) which was created by the General Assembly in 1956; All the others were established by the Security Council with the consent, or at least without the opposition of the Soviet Union and France who have the right of veto in the Security Council. It is true that after some further actions were vetoed in the Security Council, the General Assembly continued to deal with the matters under the Uniting for Peace Resolution.

The problems of having to integrate such forces are immense. They speak different languages, they have different weapons, they get different rates of pay, they come from different areas in the world, their uniforms are not necessarily ideal for the actual locality to which they may be going, and most of them know very little about the locality where they are going. The ordinary problems of making an army run smoothly, the logistical and the command problems are difficult enough; when you do it in an international force they are compounded many, many times.

On the initiative of the Canadian government, a meeting was called in Canada, I think it was in 1964, to which more than 20 countries came ---- I think almost every country which had ever participated in the peacekeeping operations ---- to discuss the technical and logistical problems in order to see what was necessary to keep forces armed and prepared for quick use by the United Nations. Thus, while it is not possible to get a directive or resolution through the UN for such forces to be called into being on a stand by basis, a number of countries are doing it on their own and they are training their forces for UN purposes, so that they will be very quickly and readily available when needed. This is also a very interesting development from the point of view of international law and politics where countries of their own accord are volunteering not merely the payment, but the provision and the training and the keeping of armed contingents, so that they will be ready for UN service.

The question of financing led to a very serious problem in the United Nations. A number of countries, of which the most important are the Soviet Union and France took the position that the UNEF forces and costs and the Congo forces and costs were illegal under the Charter, and refused to pay for these forces. The Secretary General finally reported in 1965 that 16 countries, including the Soviet Union and France were in arrears more than two years in their assessments. The U.S. took the position, and so did the United Kingdom and a number of other countries, that under Art. 19 these countries lost their right to vote in the General Assembly. The Soviet Union, France and other countries said that these assessments were illegal and hence no legal action under Art. 19 was possible. The General Assembly had referred the question of the legality of this charge to the International Court of Justice for an advisory opinion and in 1962 the International Court of Justice by majority vote, I think 9 to 5, said that the assessments were legal; in fact the majority went further and said that the General Assembly could, under the United for Peace Resolution, set up these peaceforces when the Security Council was paralyzed by a veto. The General Assembly by a majority resolution, accepted this advisory opinion of the International Court of Justice, and in the following year, by Assembly resolution in 1963, the General Assembly passed, adopted a resolution, setting down the principles for sharing the cost of peace-keeping activities by the Members of the UN. In 1964 when the Secretary General reported these 16 countries were in arrears, the United Nations really was confronted with the greatest constitutional crisis in its history, because the Soviet Union and France took the position that these were illegal assessments; that each country could reserve the right to interpret the Charter itself; that the opinion of the International Court was merely an opinion and was not binding on them; that the recommendations of the General Assembly in the resolutions that had been adopted concerning the matter were merely recommendations and were not binding on them; and that they were not required to pay for illegal peace keeping activities and hence that the Article 19 had no application and they could not be deprived of their votes. The United States took the position that if they would not pay, they would be deprived of their votes. They said that if they were

deprived of their votes, they would walk out. This confronted the United Nations with a basic problem in a very sharp and acute form. The United Nations, when the Charter was signed, was really founded on the assumption of great power unanimity, or at least sufficient acquiescence by the great powers to permit the organization to operate. There is no way in the world you can compel a great power to do something against its will except by only two means: firstly, by the use of force, which, in the case of a great power, means war, which is obviously excluded or secondly, by the force or influence of public opinion, which is measured or influenced by the votes of the Members of the United Nations. One test of what is just or correct is the vote of the non-aligned countries, who because they are not allied to either of the two great power blocs are regarded as uncommitted and as being there fore less involved, and therefore capable of taking a more objective view I know there are those who disagree with that point of view, but I know no other way you can determine what is the opinion of the international community or world, what is just or unjust, except by the registration of votes in the United Nations. This is a far from perfect instrument, but until a better one is perfected, it is the only practical way to go about it. The United Nations' Charter is a living tree, not a document which is forever frozen by the circumstances of 1945 but a dynamic thing which can and should develop and evolve. The United Nations has in fact evolved and developed but it was discovered or re-discovered that there is no way of forcing a great power to do something it regards as against its vital interests. There are those who say that the United Nations suffers some paralysis because the Peoples Republic of China is not represented there. Can you visualize how the Organization could operate effectively if the United States or the Soviet Union or France were to walk out.

As a result of this view of the Organization the arguments about Art. 19 went on for a long time. The 19th session of the General Assembly in 1964 did not operate, that is, although it met it could not take any action because the United States said that if any votes were taken it would insist on the application of Article 19 and many countries felt that if the Soviet Union was deprived of its voting rights, it would walk out. Finally, after the passage

of time and further reflection, the United States decided not to insist on the application of Art. 19 because they said it was better to preserve the Charter and the Organization than to insist on the legalities of the implementation of Art. 19.

A special committee on peace keeping known as the "Committee of 33" was set up to try to solve the problem regarding peacekeeping. To find a solution to this problem is like squaring a circle. How can you persuade great powers who say that certain types of peacekeeping action are illegal except when authorized by the Security Council and that only the Security Council can fix the assessments for the costs of peacekeeping with the views of others that only the General Assembly can fix the assessments for all costs of the United Nations? Since there is no way you can compel any great power to do anything in this field against its will and since there are limits to the amount of pressure which can be exerted by the smaller countries and the power and the influence of public opinion, one had to face the problem of how to resolve the deadlock. The nations of the world are now negotiating in the Committee of 33 but I foresee no early solutions for the problem of which body can authorize peacekeeping operations and which one can make the assessments therefore.

It is possible that in the future the great powers will come to rely more and more on the Security Council for the implementation of peace keeping, where they do have the veto over actions they oppose. However, as I understand the situation, some of the great powers, and many of the non-aligned small powers, want the General Assembly to retain its right to intervene in peace-keeping situations when the Security Council is prevented from doing so because of a veto. The small and the non-aligned powers who insist on the right of the General Assembly, have a real and powerful voice there, and they have voted to continue its peace keeping functions. They have agreed with those great powers who say that the Security Council merely has primary responsibility but not sole responsibility in this field.

In any case it seems clear that the United Nations will at least for the immediate future, have to rely on voluntary assessments, as they are doing now in Cyprus, until they can come to some agreement on how assessments should be made obligatory for peace keeping functions. There are many formulas which can be put forward as to how to implement the United Nations peace keeping operations, but since politics is the art of the possible, sometimes the best course is to accept what is feasible. And we see that it does work. The United Nations is preserving peace in Cyprus on a voluntary assessment basis and would be a very very sorry thing for the world, if it did not and could not do so even on a voluntary assessment basis. Sometimes you can not achieve the best and you have to be content with the good.

Now, if I might just draw a few principles or conclusions from this brief outline of the history of the United Nations forces. Firstly, that these UN forces except those in Korea were meant to be conflict-reducing peace forces, not fighting forces. Secondly, that with the sole exception of Cyprus the contingents of the peace forces were drawn, not from the permanent members of the Security Council but from the smaller powers because this was really the desire of the host country. The host countries feel more comfortable with troops of small powers on their territories than with troops of great powers. Moreover the great powers seem to recognize that it is in their mutual interests not to have their troops in some peace-keeping operations; the great powers also get nervous about little conflagrations and conflicts because they can sometimes get drawn in against their real wishes; sometimes they are afraid that the other side is liable to go in and then they might have to go in too, and this might involve them in the possibility of a confrontation that they do not really want. So often the great powers are quite content to have peacekeeping forces drawn from only smaller powers, particularly since the host countries prefer it that way. Thirdly, these peace keeping forces can operate only with the consent of the host country; as to whether this consent and permission for them to remain must continue throughout, is something not yet clarified; I might guess that the majority opinion would hold that such continued consent was necessary, but no actual case has yet arisen, and the outcome might depend on the facts of each situation. One of the advantages

about UN forces as compared to others, is that the host countries know that the UN doesn't really attempt to interfere in their internal affairs, particularly when the troops are from smaller countries. In the case of the big powers, because of their huge influence, the tremendous influence they can exercise in so many different ways, there is the possibility that they might try to influence the internal developments in a country, whereas these host countries know that the United Nations does not and cannot try to influence the political developments of a country except through trying to achieve agreement and conciliation through the provisions and processes of the Charter. Usually the UN does not attempt to bring about political settlements through its peace-keeping operations. Their function is not peace-making and even in those instances where mediators are appointed in addition to peace-keeping forces, the mediators usually act independently of the forces and follows a different line of authority to the Security Council or the General Assembly or the Secretary General.

In this picture I tried to draw, it becomes clear that every situation varies from every other one; each case is more or less sui generis. Hence, when suggestions are made about having standing UN peace-keeping forces, the enormous problems of the financing, stationing, deployment and command make these suggestions unrealistic in present circumstances. Dag Hammarskjöld recommended against creating standing UN forces, because he said, and I think this is the position of U-Thant also, that every situation is unique and you cannot visualize standing forces that would be able to meet all situations. It would seem, on the whole, better to rely on stand by forces rather than on a standing army for the UN. Certain great powers are opposed to the idea of standing armies and forces and, without the cooperation or at least the acquiescence of the great powers, it is not possible for such constitutional problems to be resolved.

Another question that arises, and has been asked by many people, is whether these peace-keeping forces, which succeed in tamping down and putting out the flames of a conflict, do they not have the effect of preventing or at least postponing the peaceful settlement a solution of political disputes? It is argued by some that the very fact that you take the heat out of the situation, the very fact that people are no longer killing each other, tends to make it a little less

urgent to arrive at a peaceful settlement of the dispute not only on the part of the great powers, and the other Members of the United Nations, but even on the part of the parties themselves. There may be some truth in this complaint or charge, but the answers in so far as any answer exists, is that it is better to postpone a political settlement, than to have the dispute flar up or explode into fighting. Perhaps there is a possibility for the United Nations to concentrate a little more on trying to bring about the settlement of some of these long standing conflicts and disputes rather than in confining itself mainly to putting out the flame, stopping the fighting, achieving a cease fire and maintaining or restoring international peace. Another interesting development in peacekeeping operations is that the role of the Secretary General has grown greatly. The Secretary General was given important powers under the Charter; he has similar powers to those of a state in being able to bring to the attention of the Security Council threats to the peace or a situation which could endanger the international peace. Under the development, evolution if you like, of these peacekeeping operations of the United Nations, if you try to be too precise or detailed in the resolutions in the Security Council, it may be difficult to get agreement and some country or other may find some clause not to its liking. Hence, there has been a tendency merely to adopt simple resolutions and to leave it to the UN Secretary General to implement the resolutions. The countries had confidence in the Secretary General and know he was not promoting the interest of any side, but only promoting the interest of the United Nations. During the Congo crisis, when one of the great powers, the Soviet Union and to a lesser degree some other great powers, said that the Secretary General was really going beyond his powers. But under any Secretary General the same tendencies are likely to develop because you have to have somebody to take day to day, perhaps minute to minute decisions when you have an operation of this sort you cannot go back to the Security Council every few hours or every day for interpretation of its resolution. On the whole the situation is workable if there is confidence in the Secretary General. The Secretary General keeps the members of the Security Council informed privately and informally through direct conversations and also through formal reports, which are con-

sidered publicly in the Security Council.

The overall conclusion I would like to draw, al though I know that not everybody agrees with this, but I would like to submit it to your considerations, is that the amazing fact is not that the United Nations has not been able to carry out all of the provisions of the Charter, im plement them all, and has failed in some of its goals and objectives, but rather the wonder is that, with all the problems and difficulties and the confrontations it had to live through during these 20 years, that it has not only survived but has done as well as it has. It has developed new tech niques which were not tried or tested at the time the Char ter was adopted; it has developed a new "know how", new expertise; and in dealing with difficult disputes where many governments had failed, the United Nations has succeed ed very well in maintaining or restoring international peace. Perhaps it has succeeded better in its job of peacekeeping than in its job of peace-making. I hope and I'm sure all of you hope that this process and this success will continue.

(17)

EPSTEIN: General Survey of Disarmament

Mon. June 13 1966 16:00

(Thank you Prof. Amaldi). I have been asked to give a general background survey of the problem of disarmament, a sort of historical perspective of what has gone on these twenty years. I don't intend to go into what occurred at the various peace conferences before the first world war or what occurred in the League of Nations, although some of the things that were achieved during the time of the League of Nations, for example the Geneva Protocol of 1925 banning bacterial, chemical and gas warfare, still have validity and legality to-day. What I intend to do is to give you a brief review of what has happened in the field of disarmament after W.W. II and from the United Nation's point of view.

For the past 20 years in the United Nations they have discussed disarmament in the Security Council and at almost every session of the General Assembly, as well as in many different commissions and committees set up to deal with the whole problem or some specific aspects of it, varying in composition from two to the full membership of the United Nations, which is now 117. The question was discussed in thousands of meetings and the amount of documents and records that have been accumulated could literally cover the entire wall of this room. For many many years, nothing was achieved and yet in 1963 we have what turned out to be a vintage year. That was the year of achievement when several important agreements were signed. In June 1963 the United States and the Soviet Union entered into what came to be known as the "hot line agreement" for a communications link between Moscow and Washington. In August 1963 they signed the partial test ban treaty which has now been signed by one hundred and ten countries. In October 1963, at the General Assembly the United States and the Soviet Union entered into an agreement, not to put nuclear weapons or other mass destruction weapons in orbit, or station them in outer space and that agreement was endorsed by the General Assembly and made universal. In addition to that, we saw

something develop in 1963 and 1964 which came to be called the "policy of mutual example" or reciprocal, unilateral disarmament measures which took the form of budgetary reductions and unilateral decisions for a cutback in the production of fissionable material for military purposes.

Despite all the enormous efforts and the successes of 1963-64, we have a paradoxical situation that the arms race has tended to increase and accelerate. I don't know what the exact figure is but I have heard figures ranging from 120 billion dollars (that is 120 thousand million dollars in European terms) a year and up to 170 billion dollars a year as the total world expenditure for armaments. It is unnecessary to stress to a group of the nature of this one what this means in terms of the waste of resources and potentialities which could be used for better purposes. Nevertheless, as the arms race intensified so have the attempts to achieve disarmament intensified. At one time or another almost every leading world figure has said that disarmament was the most important political problem in the world and most people seem convinced of this and yet we seem to be in a position where it is impossible or so it seems at the moment, to make any great headway in grappling with the problem.

What I would like to do is to give you just a quick sort of personal bird's-eye view, a panoramic view as I see it, of what's gone on these twenty years to see whether there are some lessons which can be learned for the future discussions of disarmament and peace because there is a very high correlation between those two subjects.

Now in 1946 immediately after the war, the world faced the question of disarmament and the new situation that existed as a result of the discovery of the atomic bomb. The first resolution, (resolution I) of the United Nations is the resolution on the peaceful use and the control on atomic energy. It laid down four propositions: that scientific information should be exchanged for the use of atomic energy for peace; that atomic energy should be controlled so as to ensure that it would be used only for peaceful purposes; that all atomic weapons should be eliminated as well as all weapons of mass destruction; and that there should be effective safeguards by way of

inspection and other means to make sure there was no evasion. The resolution also set up an Atomic Energy Committee which was the first committee set up in the United Nations.

The United States delegation under the leadership of Bernard Baruch, put forward what came to be known as the "Baruch Plan" which had three or four main principles. There should be an international authority, an international development and control authority, which would own all atomic material, all nuclear fuel and all source material. It would have the ownership, the operation and the management of all non-dangerous facilities and would license them to the individual governments for peaceful uses. The Soviet Union opposed this plan on the ground that it was an interference with national sovereignty and the internal affairs of countries, and it urged the prohibition of nuclear weapons as the first step and the destruction of all bombs. The United States opposed this and said that it did not provide any safeguards against violations and evasions. Thus, from the very beginning there was a developing deadlock. After three years of the most intensive discussion the Atomic Energy Commission adopted what was later approved by the General Assembly as the United Nations Plan for the control of atomic energy. This was basically the Baruch Plan with some variations and it was adopted by a vote of 46 in favor and only the Soviet Union and its allies opposed. Nevertheless, majority votes in this field do not bring agreement. You can perhaps organize some collective security or peace keeping forces without all powers but you cannot organize disarmament without the major powers or against the will of a major power. This is a field where you can only operate with full and freely negotiated consent of every important power. Despite the approval of the United Nations there was a deadlock.

In November 1946, the General Assembly also adopted a resolution on the general principles for the regulation and reduction of armaments; this dealt with the whole question of disarmament. It recommended that the Security Council should formulate practical measures according to their priority to achieve the reduction and regulation of armament and armed forces. It also recommended the withdrawal of the armed forces first from the enemy or ex-enemy territories and then from other territories when conditions permitted; it also recommended the general progressive

balanced reduction of all armed forces. A commission was created by the Security Council, called the Commission for Convenient Armaments, which met at the same time, in parallel with the Atomic Energy Commission, to bring about the reduction of armaments. Here the Soviet Union proposed an immediate plan for a one third reduction of all armed forces and all armaments of the great powers. The Western powers opposed this, saying that first of all you had to know what was the armament situation and, under the leadership of France, they proposed a census, an international census; all countries should disclose what their armed forces and armaments were, then they would be verified and then you would be in a position to negotiate the reductions. The Soviet Union said this was (a statement which afterwards came to be crystallized in the phrase "control without disarmament") merely a means of gathering military intelligence about the armed forces and armaments of every country and they said "no", that first you had to make a decision to reduce and then afterwards you could go ahead and check to see that the reductions were carried out. The Western Powers also argued at that time that you also had to establish the security arrangements under the United Nations Charter set up the international police forces under Article 43 of the Charter - and you also had to have peace treaties with Germany and Japan before you had the political conditions which would permit you to carry out disarmament. The Western Plan for a census and verification was also adopted by the General Assembly in 1949, but no progress was made because of Soviet opposition, and here too the problem was deadlocked.

At that time the Soviet Union had also urged that you must link nuclear weapons and conventional weapons in disarming. The United States said "no" you must start with the least sensitive weapons first which are the conventional ones. It said that if you started disarming with nuclear weapons that would mean that just the United States would be disarmed, and without controls which are necessary, and they said this would upset the balance at that time and would favor the Soviet Union which had no nuclear weapons but which had a preponderance of conventional armed forces and weapons. The Soviet Union charged that the United States wanted to preserve its monopoly in the nuclear field and at the same time wanted to carry

out military espionage and then to cut down the Soviet Union in the conventional field in which the United States claimed that the Soviet Union was stronger.

The deadlock persisted for several years until 1950, when the Soviet Union walked out of the Commission for Conventional Armaments and refused to participate in the Atomic Energy Commission until China, that is, the People's Republic of China occupied its rightful seat. It also walked out of the Security Council as you recall, but it came back later at the time of Korea and also returned to the other United Nations bodies. It was decided in 1950 to create a committee to see how to move ahead in this deadlocked disarmament situation and it set up a Committee of 12. Incidentally, I should say that the Atomic Energy Commission for Conventional Disarmaments were composed of 11 member countries of the Security Council plus Canada when it was not a member of the of the Security Council, because Canada as you recall was one of the three Western Powers participating in the discovery of the nuclear weapon. This committee of 12 met and recommended unanimously that instead of having these two separate Commissions for Atomic Energy and for conventional armaments, there should be one disarmament commission to deal with the whole problem, that is to deal with both conventional and nuclear weapons at the same time. Although the General Assembly did create a new unified Disarmament Commission of 12 Powers including Canada, the main powers carried forward their basic disagreements. The Western Powers said there should be progressive and continuing disclosure of all armed forces and the armaments including atomic. The words "including atomic" represented a new element they added. But atomic disclosure and verification would come at the fifth and last stage of the process of disclosure and verification. They also said that verification should be based on continuing inspection and that, until a better plan was divided, the United Nations Plan (the so-called Baruch Plan) should be the basis for the control of atomic energy and the prohibition of atomic weapons. They also wanted a permanent system of safeguards to detect all violations. The Soviet Union proposed firstly, the unconditional prohibition of all atomic weapons; secondly, they proposed the establishment of international control of the reduction of arms and of the

prohibition of atomic weapons; thirdly, they proposed that the first reduction of conventional weapons should be one-third reduction of all armed forces and all armaments of the five Great Powers within one year; and fourthly there should be full disclosure of all armaments and armed forces including atomic, one month after the decisions had been agreed for the prohibitions and the reductions. This led to a continuation of the old argument, as to whether you must have a verification simultaneously with or before or after, the prohibitions. Very quickly the negotiations arrived at a deadlock again.

In order to try to resolve the deadlock - and this came on the initiative of Prime Minister Nehru of India in April 1954. After the Americans had exploded a huge hydrogen bomb at Eniwetok Atoll in March 1954, Nehru proposed the cessation of all nuclear tests. Then the United Kingdom proposed the establishment of a subcommittee of the Disarmament Commission to carry on negotiations in private. The Disarmament Commission set up a Subcommittee of five, consisting of the United States, the Soviet Union, Great Britain, France and Canada. That Subcommittee met in London in 1954, '55, '56 and '57. The Subcommittee started out in 1954 with an Anglo-French Plan for disarmament in three stages synchronizing reductions and prohibitions and control for both conventional and nuclear arms. Their plan for comprehensive disarmament provided that the numbers of armed forces and armaments would be reduced in three stages as would also the production, the testing and the use of nuclear weapons, and each stage would begin when the countries were satisfied. The control organization was ready to verify the next stage and that the reductions and prohibitions of the preceding stage had been carried out.

In 1955, the Western Powers put forward a figure for the reduction of armed forces for the USA, the USSR and China to a level of between one and one-half million men, and for the United Kingdom and France to a level of between seven hundred thousand and eight hundred thousand and for the other countries proportionate reductions to levels not exceeding one percent of the population.

At first the Soviet Union was opposed to the Anglo-French Plan but after negotiating in 1954, and the early

Spring of 1955, the Soviet Union put forward its own plan on May 10th 1955 for comprehensive disarmament. It was based in a large part on the Anglo-French Plan for disarmament but it was to be completed in two rather than three stages of one year each. The problem of when you ban the use of nuclear weapons was solved by Soviet acceptance of the Anglo French proposal that the use of these weapons be prohibited when seventy five percent of the agreed reduction of conventional armed forces and armaments had been carried out.

The situation really looked hopeful at that time, 1955 was a good year - it saw the conclusion of the Austrian Peace Treaty and the calling of the Summit Conference in Geneva in July. At the Geneva Summit Conference the parties agreed that war was no longer possible and that it could not be rational means of achieving any country's objectives. However, on disarmament question the position tended to disintegrate. The Soviet Union restated its plan of May 10th 1955 for disarmament in two stages. They had adopted in effect Jules Moch's dictum of no control without disarmament and no disarmament without control. However, in its May 10th Plan the Soviet Union had stated (and it was to hear about this many times thereafter) that there was no way in which you could guarantee that all stocks of nuclear weapons had been eliminated, and that there were possibilities of evasion whereby some stocks of nuclear weapons could be hidden. Hence it had proposed an early warning system with control posts at main railroad junctions, crossroads and at main airports and seaports to see that there were no large troop movements. They argued that you could not have a sudden surprise attack without a big build up and movement of forces, and that observers stationed at important cross roads, railway stations airports and seaports would therefore be alerted to any danger. This became the basis of a proposal by President Eisenhower at the Summit Conference. He put forward a plan for aerial observation to prevent surprise attacks, where each side would exchange blueprints of its military establishment and they would have reciprocal aerial surveys of each other's territories. The Soviet Union said this

was "control without disarmament", and the United States said the plan for "open skies" was the only way to ensure against a large scale surprise attack. The Prime Minister of France, M. Faure put forward a plan for percentage budgetary reductions of armaments, which a part would be devoted to economic development, particularly of the under developed countries, and part would be used for reducing domestic taxes. Prime Minister Eden put forward a plan for inspection in an area in central Europe five hundred miles on each side of the dividing line i.e., the line between East and West Germany.

Up to the time of the Summit Conference the disarmament negotiations were about comprehensive disarmament. After the Summit Conference the discussions proceeded mainly on the basis of partial disarmament measures. Mr. Stassen who was appointed as the American disarmament negotiator put a reservation on the previous American disarmament proposals, which included the Baruch Plan for nuclear disarmament and the conventional disarmament proposal to reduce American and Soviet forces to a level 1 to 1 and one-half million men. In 1956 and 1957 the discussions centered on different measures of partial disarmament such as the Soviet Proposal for banning the use of nuclear weapons and the liquid action of foreign military bases, the Indian proposal, which was adopted by the Soviet Union, to stop all nuclear tests, and the United States proposal to cut off the production of all fissionable material and that the Soviet Union and the United States should each contribute up to fifty tons of military fissionable material to be used only for peaceful purposes. None of these proposals was accepted by the other side, but intensive negotiations took place.

In the meantime, in December 1953, President Eisenhower had proposed at the United Nations the "atoms for peace plan". He said that, since it was difficult to bring about disarmament by the direct approach of eliminating nuclear weapons, perhaps it could be promoted by the indirect approach by starting to build up to the peaceful uses of atomic energy. He proposed that the nuclear powers should contribute fissionable material for such peaceful uses and

that the United Nations should keep the different countries to obtain the benefits of atomic energy. This "atoms for peace" proposal, after lengthy negotiations, led to the establishment in 1956 of the International Atomic Energy Agency. While helping to disseminate knowledge of the peaceful uses of atomic energy, by the dissemination of peaceful power reactors, this process carries the danger that non-nuclear powers might become nuclear powers too, unless there are adequate safeguards.

The Soviet Union had throughout the period from 1949 (at that time of the Stockholm Peace Pledge) until 1957, always has at the forefront of its various disarmament measures the proposal to ban the bomb and to liquidate all foreign military bases. The Americans used to say they could always tell when the Soviet Union was serious and when it was not serious about disarmament. They said that when the Soviet Union was not serious it came up with two proposals: one to withdraw all military forces and liquidate all foreign bases and two, to ban the bomb. The Americans said there was simply no way to simply ban the bomb and that you could deal with this whole question only step by step. They thought that the Soviet proposal of May 10th 1955 seemed to indicate a serious approach. On the other hand, the Soviet Union said that as soon as they accepted all or part of an American proposal the Americans backed away from it. Nevertheless, in 1957 in the negotiations between Mr Stassen and Mr Zorin in London, there were serious attempts to achieve a zone of inspection against surprise attacks covering part of Europe and part of the United States and the Soviet Union. Each side put forward proposals, but they did not succeed in agreeing on the same zone.

In 1957, the Soviet Union also put forward the idea of a test ban and the United States at that time insisted that it had to be linked to a cut off in production of fissionable material for nuclear weapons, and no agreement was reached. After the 1957 meeting of the Sub-Committee in London, the Soviet Union refused to go back to the Sub-Committee saying that it was weighted against it, as there were four Western Powers against itself.

For the first time the Soviet Union in 1957 started

putting forward the idea of parity. At first, they said there had to be equality or parity between Eastern Powers and the Western powers; later on they came up with the idea of the so-called "troika" i.e., parity of the three world groups - the East, the West and the non-Aligned world. In 1957, they refused to go back to the London Sub-committee of Five and said they wanted the Disarmament Commission to consist of all members of the United Nations - at that time 82. And so, there was a redoubled deadlock on procedural as well as on substantive grounds.

Nevertheless, as a result of correspondence that they ensued between Mr. Krushchev and Mr. Eisenhower, two conferences did take place. Legalistically speaking, one can say they took place outside the United Nations, but, since they took place at the U.N. office in Geneva, and the Secretary-General was represented at them, it is unnecessary to decide the abstruse scholastic argument as to whether they were inside or outside the U.N.

In the Summer of 1958, in Geneva, there was a Conference of Experts to find out how and whether you could control the cessation of nuclear weapons tests. This conference was set up on the basis of parity, which was one of the reasons why it was said to be outside the United Nations, because the Americans refused to agree to the idea of parity inside the United Nations; nevertheless, four countries were represented from the East by individual experts, and four from the West, the same four from the West as always, that is to say, the United Kingdom, France, the United States and Canada; from the East, they were: the Soviet Union, Poland, Czechoslovakia and Romania. So you have four on each side though they were regarded as individual experts rather than as states.

They came out with a unanimous report in August 1958 saying that you could control all tests except very small ones below 5 kilotons; but they outlined a very large system of controls: 180 land control posts around the world and 10 ships, and then, they set up a scheme for detecting tests in outer space, for which you would have nine different methods of detection, including satellites. I remember, at one time, the Soviet representative saying that the cost of this inspection system for a test ban alone would be 2 billion dollars to set it up

and 250 million dollars a year to maintain it, and that might cost more than the armament system. Nevertheless, they engaged in very serious negotiations.

The Report of the Experts was the first time you had an East-West Conference agreeing not only on the objective namely, banning tests, but also on the method of control. Still, this was only an experts report. That Autumn the conference on the Discontinuance of Nuclear Weapons Tests opened in Geneva as a political conference of the three nuclear powers, the U.S., the U.S.S.R., and the U.K. That Conference went on from October 1958 until the Spring of 1962, when it was absorbed, after it had broken down in a deadlock, by the 18-Nations Conference.

In the Autumn of 1958 there was also a Conference of Experts on Surprise Attack. This time there were ten countries - five from the East and five from the West. The Soviet Union said that you had, first of all, to agree on the principles, the political questions of what you were going to do; namely, withdraw bases and things like that, to reduce the risk of surprise attack; and the Western powers insisted on a purely technical approach to the question, and wanted to discuss what would be necessary to prevent a surprise attack. The Soviet side argued that you had to have agreement on principles on the political questions, and the Western side argued that you had to go ahead with the technical details in order to see what was possible and feasible in terms of political agreements. So they quickly reached a stale-mate and the conference broke down.

In 1959, there was a Foreign Ministers Conference at Geneva of the U.S.S.R., and the U.S. and the U.K. and France to discuss the questions of Germany, European Security and Disarmament.

The basic position of the West has been, throughout, that you can have small steps towards disarmament or arms control, but you could not have drastic or radical disarmament until you achieved either some basic political settlements and the resulting establishment of confidence would make it possible to have drastic disarmament. Alternatively, the Western Powers argued that you must set up

the United Nations peace keeping forces under Art. 43 of the Charter - the police forces would guarantee security as an alternative to national armaments. The basic position of the Soviet Union has been, throughout, that you can and should arrive at arms reductions and prohibitions, and that such agreements in themselves would cause such a reduction in tensions and would bring about such a change of climate that the political settlements would in effect become easy to solve. These differing approaches to the problem as to whether political settlements must precede or would follow disarmament, are with us to this day.

The foreign ministers could reach no substantive agreements, but they decided to set up a Ten Nations Committee on Disarmament - I should mention also by the way, that 1959 was also one of the vintage years; you had the Foreign Ministers' Conference; then Krushchev was invited to visit the United States: and the Fall, in the General Assembly, he proposed the plan for general and complete disarmament in three stages.

The Soviet proposal for general and complete disarmament unanimously sponsored - not just voted and agreed on: all 82 members of the United Nations became sponsors of the Krushchev Plan for general and complete disarmament and they agreed that it should be referred to the 10 Nation Committee for implementation.

I should perhaps interject here that every year we have a big review in the General Assembly of the United Nations of the whole disarmament question and all schemes and proposals; this is the big deliberative consideration whereby all the members of the United Nations review the work of the disarmament negotiations and express their views and opinions and make proposals and suggestions. While this view and ventilation and expression of policies and opinions and principles is very important, the actual detailed negotiations must be worked out by a small group, and mainly by the powers concerned.

So the Foreign Ministers in 1959 set up this Committee of Ten: 5 Western Powers, the United States, Britain, France, Canada and now Italy; and 5 Eastern Powers - the Soviet Union, Poland, Czechoslovakia, Romania and Bulgaria.

This Committee of Ten met in Geneva in March 1960 to discuss the United Nations resolution for general and complete disarmament.

After a very few months, in June 1960, the Soviet Union and the Eastern delegations walked out; they gave as a reason at the time that the West was not serious as regards to complete and general disarmament, but insisting on partial measures and paid only lip service to general and complete disarmament; while the West said that the Communist countries had walked out because this was the aftermath of the U2 flight and the breakdown of the Summit Conference at Paris in April 1960, and also because of the troubles that had developed between the Soviet Union and the People's Republic of China and that at a meeting at Bucharest, under the pressure of the People's Republic of China, they agreed to break off this Conference - that is what the West said.

So once again there was a deadlock and this deadlock went on till the autumn of 1961. In that year the U.S. and the U.S.S.R. made what we considered to be a great step forward. Mr. Zorin and Mr. McCloy agreed on a Joint Statement of Agreed Principles, in which they laid down eight principles of disarmament which the General Assembly unanimously endorsed. They also agreed to set up the 18 Nation Disarmament Committee. This time there were the five Eastern and five Western Powers, plus eight so-called "non-aligned" countries, which meant, not bound by military alliance to either of the two sides. These were chosen on a geographical basis. The Soviet Union at first had wanted 5-5-5, on the principle of the so-called "troika", but the Americans refused. They finally agreed on 5, 5 and 8, the eight being: Brazil and Mexico from Latin America, Sweden from Europe, Nigeria, Ethiopia and the United Arab Republic from Africa, and Burma and India from Asia.

This 18 Nation Committee has been meeting in Geneva ever since March 1962, and its work has been along three main lines which I shall develop in more detail in my next talk. To state them briefly, these three main subjects were the following: one is the general and complete disarmament, where for the first time each side

presented a complete outline or a draft treaty for general and complete disarmament in three stages. These three stages provided for nuclear disarmament, reductions in conventional armaments and armed forces down to the level needed to preserve domestic peace and international security commitments under the United Nations Charter, and the setting up of a peace keeping force. There was to be an integrated system of control and a balance between a conventional and nuclear disarmament. Although each of these two plans differed in a very important respect, nevertheless, it was something that each side could put forward a complete plan.

The second main subject was a nuclear test ban. The ENDC continued in a nuclear Sub-committee of three powers: the United States, the Soviet Union and Britain, the nuclear test ban discussions which had taken place in Geneva from 1958 until they had broken down in 1961, after the Soviet Union - as the Western powers and the United States put it - broke its unilateral moratorium and resumed testing at the end of August 1961.

In 1963 they succeeded in agreeing on a partial test ban treaty banning nuclear tests in the atmosphere, in outer space and under water. Although it was signed in Moscow on August 5, 1963, it was a direct result of the years of discussion in Geneva. In fact I am one of those who believes that the treaty could not have been so quickly agreed upon in Moscow without the previous years of intensive discussions in Geneva in which they had explored every alleyway, every avenue and every consideration and thus knew the exact dimensions and impact of every proposal, so they could understand exactly what they were doing.

They are still discussing in Geneva the question of the comprehensive or underground test ban.

Then, the third subject of discussion: they went in to what came to be known - and this is a new expression - the area of collateral measures of disarmament. These various confidences building or partial disarmament measures which could facilitate general and complete disarmament comprise a long list of different measures. I will read off some of the 20 odd subjects which the respective sides

propose. The Soviet Union proposes:

- 1) the reduction of military budgets;
- 2) the withdrawal of foreign troops ;
- 3) the reduction of the total number of armed forces;
- 4) the elimination of bomber aircraft;
- 5) the prevention of the spread of nuclear weapons;
- 6) measures to prevent surprise attacks with obser
vation posts;
- 7) a non-aggression pact between the NATO and War-
saw Pact powers;
- 8) denuclearized zones, such as "Rapacki Plan" and
the latest variation, as it is sometimes referred
to "Gomulka Plan"; (The Rapacki plan was for a
zone of reduction to armaments and denucleariza-
tion in Central Europe, comprising East and West
Germany, Poland and Czechoslovakia; and the Go
mulka plan was for a nuclear freeze there);
- 9) then the prohibition of underground tests;
- 10) the prohibition of the use of nuclear weapons,
and as a first step, a mutual declaration of non
first use;

then they also had several items such as:

- 11) the cessation of war prpaganda (they came within
an ace of an agreement on this in 1962, when after
it had been agreed in Committee, the Soviet Union
for whatever its motives, moved a number of amend
ments - at that time the western and non-aligned
powers said because of the ideological difficulties
with the Chinese - however, that may be, the
thing aborted);

they also had some proposals for

- 12) the exclusion of nuclear weapons and other weap
ons of mass destruction from outer space.

Thus there are a dozen proposals for collateral measures.

Then there are a number of American proposals for
collateral measures starting with

- 1) measures to prevent surprise attacks, war by ac
cident or miscalculation (and it was as a re-
sult of this proposal that they agreed in June
1963 on the "hot line" communications link be-

tween Moscow and Washington which was one of the elements in the American proposal for measures to prevent war by miscalculation or accident);

- 2) then there was the question of the cut off, or the cut back, of fissionable material which had been pressed for several years, and now the U.S. proposed a transfer to peaceful uses not of 50 tons by the U.S. and U.S.S.R., but that 60 by the United States and 40 by the Soviet Union should be transferred from military to peaceful uses;
- 3) then they also proposed a verified freeze of all nuclear delivery vehicles;
- 4) the non-dissemination of nuclear weapons and here they had various suggestions including non-transfer to national control and inspection of all peaceful nuclear activities by the IAEA, and
- 5) a comprehensive test ban;
- 6) they also proposed measures to keep nuclear weapons out of outer space;
- 7) the phased reduction of Soviet and American bombers.

At the moment the most important collateral items being discussed are → non proliferation; and
→ a comprehensive test ban.

As regards general and complete disarmament, while all ENDC participants agree that it is important and must be pursued, it is not for today or tomorrow, but for a little later on. You will be hearing in more detail about the current negotiations on these questions from Ambassador Cavalletti and a little of the background material from me in my next lecture.

Now, if I can just reduce this historical survey to the formulation of a number of principles, then I think I will have completed my talk for today.

You can trace what I call the "chicken and the egg" type of argument all the way through from 1946 to this very day, that is to say the "which comes first" argument. (1) Which comes first: nuclear disarmament or conventional disarmament? To this very day it is not fully settled

although it is agreed that you must have a balance between them. The Soviet position is that you must get rid of the nuclear threat first, and that you have to get rid of your nuclear delivery vehicles, if not all in the first stage, keeping a few of them as a nuclear umbrella until the end. While the Western powers say you must do the whole thing in a balanced and proportionate way throughout - you have to shrink and reduce both your conventional armaments and armed forces and your nuclear weapons and delivery vehicles all by 30% to 35% in each of three stages. The argument of what is balanced has never been determined; everybody agrees that the disarmament process must be balanced, but it is not agreed on how you apply this in practice. (2) Then there is the old question of which comes first: disarmament or control? The Soviet Union charges that what the United States wants is control of armaments and not of disarmament. The United States charges that the Soviet Union wants disarmament without adequate control. While both agree that you must have effective control and that the control should not be more than is necessary for applicable disarmament measures, they haven't agreed on how and to what extent the controls should apply; (3) then there comes the old question of whether you should have political settlements before disarmament and how much in the way of political settlements you must have. Must you solve the problem of Germany? Or, how much down the road must you go before you can have disarmament in Germany and in Central Europe? Must you build up the security forces first? It is somewhat like the old League of Nations argument: which comes first, security or disarmament? Can you have and must you establish conditions of confidence and security in the world and also achieve political settlements before you can have disarmament? Or will disarmament help create conditions of confidence and security and help bring about political settlements? Everybody is agreed that you must have both security and disarmament, peace forces and political settlements, but nobody has yet managed to propose an acceptable way to integrate these things, i.e., how you phase them or bring them together. (4) Then, they have not yet solved the problem of whether you have partial measures of disarmament

i.e., first steps - as the West has always proposed - or whether you must start with radical and drastic disarmament - as the East has always proposed. Here too, they have reached some understanding in the joint statement of agreed principles which say you can have partial measures provided they are all part of an integrated approach to complete disarmament and not just something separate from general and complete disarmament. Some real progress has been made in this direction of what is now called collateral measures that is, collateral to the main disarmament effort. They have made several agreements in this area, as I said - in 1963 and in the Spring of 1964 the hot line agreement, the partial test ban agreement the banning of nuclear weapons in outer space, the unilateral cut back of the production of fissionable material which is still in effect, and also - although unfortunately this has not continued any further - the unilateral reduction of military budgets which did take place in 1963-4, but which has since been reversed. (5) Then, another chicken and egg type of problem which is still unresolved is the question over whether you must have agreements in principle first, or technical discussions. The Soviet Union says that the disarmament decisions are basically political decisions and, once you make the basic political decision, you can work out all of the technical details which pose no problem. The Western approach is that until you know what can be agreed upon technically, i.e., what is feasible, controllable and safe, you cannot know what political decisions you can take. The United States says that a decision in principle is something which it is easy for the Soviet Union to agree on, but difficult for the United States because its public opinion, once it makes an agreement on principle, subjects it to pressures to go ahead and make an agreement in fact; but in the Soviet Union an agreement in principle can be made or changed without any great domestic pressure. Hence they say that they, the Western powers, can only approach agreements after thorough technical discussions. Here too, Dag Hammarskjold put forward a proposal, he said " Do both; you do not have to separate them", and he pointed to the success of the test ban negotiations, in which there was an expert Committee

which bound nobody, and at the same time the parties went ahead with political discussions which they interrupted where necessary, to have further technical discussions; thus the technical and political discussions could go forward hand in hand.

Those are the five areas of discussion as to which should come first. Then the Zorin-McCloy Joint Statement of Agreed Principles agreed at least in principle on the way of solving every one of these problems. The goal they said was the general and complete disarmament in a peaceful world. Nations should retain only such non-nuclear arms as are necessary for internal order and for the preservation of a peaceful world, meaning United Nations Peace Forces, and you must abolish nuclear weapons from national armaments. Then, they agreed that disarmament must be balanced disarmament that must proceed by stages, with an assured means of transition, so that you would go from one stage to another when you were satisfied that each stage was completed. They agreed that the principle of balance meant that no state at any stage should obtain any military advantage over any other state. They agreed that there should be effective international control and that an International Disarmament Organization should have full access without any veto to all objects of disarmament. Here there was one very serious problem which was left unsolved, and the disagreement was recorded in an exchange of letters; the United States said that, in order to be safe to go ahead with this control, you had to be able to verify not merely what weapons were destroyed and what forces were reduced, but you had to be able to check to see what levels are retained, and unless you could verify the retained levels you would have no way of being certain there was no clandestine retained stocks; the Soviet Union said that this was merely a way of obtaining control over armaments and not over disarmament, and was a way of acquiring military intelligence as to Soviet armaments and armed forces, and that they could not agree to this until the zero point was reached. This is a point of serious disagreement which

exists to this date; it is a major point on which they did not they did not agree in principle and it bedevils the whole question of control and of general disarmament to this day. They agreed that progress in disarmament had to be accompanied by progress in setting up international peace keeping by creating international peace forces. They said that you must make uninterrupted efforts to reach general and complete disarmament. You could have agreement on individual or partial measures of disarmament; which should not be held up until you have agreement on all, but that each such measure ought to facilitate the whole program of general and complete disarmament and form part of it. Well, the agreed principles - with unfortunately the lack of agreement on the question of control - do represent a considerable step forward they represent really the quintessence of the agreement in principle resulting from some 15 or 17 years of negotiations up to that time. They all indicate that you couldn't put one thing ahead of another, but that you could go ahead with partial measures, such as the test ban, non-proliferation, non-orbiting in outer space, and things like that, without doing damage to your overall goal. But while this was a tremendous step forward there are still big problems - as I indicated before - in implementing these principles. How much security for how much disarmament? How much control for how much disarmament? What is balance? How much conventional disarmament for how much nuclear? How much political settlement? How far do you have to go in terms of peace with Germany or other areas of the world before you can go ahead with radical disarmament? These are the subjects which are still the basic problems of the debates in Geneva.

At the present time, as you will hear from Ambassador Cavalletti, they are concentrating in Geneva mainly on the non-proliferation question and on the test ban question. And while these are very difficult, there is no question about it but that there are serious discussions in an effort to reach agreement. The negotiating powers now know a good deal more about the techniques and the complexities of the problems than they did be-

fore. There is now a flood of literature in the disarmament field. I remember in the early days when nobody wrote on disarmament, Philip Noel Baker got a Nobel Prize in part because he wrote the first book on the Arms Race in 1957 or 1958. Now the flood of literature is such that it is difficult to keep up with it. Moreover, the major powers have created disarmament agencies or groups in their respective governments to study and press for agreements in the field. There is the feeling, in the world today - and I don't want to go into the area of military and disarmament strategy because that is somebody else's subject - that, because each side has now a relatively invulnerable retaliatory capacity neither side can gain anything from or afford to go to war; in other words, nuclear war has become impossible by mutual deterrence. Nuclear War is no longer rational, and we have to end the arms race or it will end us..... While this attitude does not provide a stable basis for permanent peace, there seems to be some general feeling that while there is this rough stability or balance of terror, and before it becomes unstable and before all sorts of new problems arise from further proliferation, this is the moment to take advantage of the existing stability and negotiate agreements. The fact that this group is meeting here indicates the serious interest, since ten years ago there were no similar international group meetings. Now I get invited to so many group meetings that there simply is not time to go to talk to all of them. Accordingly, since we know a good deal more about the nature and problems of disarmament, since there is a nuclear stalemate, or temporary balance or temporary stability - whatever you may wish to call it - the conditions are ripe for dealing with the problem now.

Just a few words about the People's Republic of China. Unquestionably, you cannot get a great deal of disarmament unless the People's Republic of China becomes a party to it. The American position - and to some extent the Soviet position is - that this does not prevent you from going ahead and getting some agreements between yourselves, but you cannot get radical disarmament without taking China into account. I am not going to go into the problem of Chinese representation in the

United Nations: that is worth at least a lecture in it self - but, since there are problems of disarming without the participation of the PRC there have been suggestions, raised mainly by the non-aligned countries, first of all in the Belgrade Conference in 1960, then in the Cairo Conference in 1964, and twice last year in the United Nations, calling for a world disarmament conference which would include all countries. The phrase "all countries" includes other countries as Germany and not just the People's Republic of China, although most people understand it as intended to apply chiefly to the PRC. Since the PRC is not represented in the United Nations they sought a formula to have the world disarmament conference take place outside the United Nations. The Assembly resolution, voted for by 112 countries, asked that this world disarmament conference should take place not later than 1967. There are indications up to this stage that the Chinese People's Republic is far from enthusiastic about the conference. There has been a move on the part of the Americans; they say they are prepared to discuss in a preparatory group with the Communist Chinese all questions in connection with holding the World Disarmament Conference and all the questions of disarmament. Nobody knows at this stage whether there will or will not be a World Disarmament Conference, or when or whether it is worth holding if the People's Republic of China refuses to participate.

The thought which I wish to leave with you from this historical survey is that there are very serious efforts being made, both in the negotiations in the ENDC and in the deliberations in the United Nations, and, in a broader way, in the idea of the World Disarmament Conference to press forward on all fronts to make progress. The question is - and here it is again a question of what come first: the chicken or the egg; disarmament or destruction? That is the thought I want to leave with you.

DISCUSSION: General Survey of Disarmament, 13/6 16:00

William Epstein

STONIER: What do you think is the chance of any serious negotiations in this generation?

EPSTEIN: Well, you are asking a big question. I am prepared to talk for three hours on this question if you like; but let me give you just two of three thoughts.

Firstly, as the United States and the Soviet Union both say they have got so much still to talk about between themselves that they can and should agree upon - the question of non-proliferation, the test ban - neither the People's Republic of China nor France nor Cuba signed the partial test ban treaty, but the test ban treaty has been a tremendous step and this was done without France. There are those who say that they have got so many things to talk about and agree upon themselves, including questions of European security, non-proliferation, bomber bonfire, freeze of nuclear delivery vehicles, test ban - there are so many things that they can and should negotiate about. They say that there is no reason that they shouldn't go ahead with these questions and work on them - that is one point of view, and it seems to have some support not only from the Western powers.

The other point of view is - as you have just said and as I tried to indicate - that you can't get much radical disarmament, you can't go far down the road to disarmament without taking into account the People's Republic of China. Then there is the question of timing. Can direct negotiations begin with the PRC? There are various possibilities. One is the possibility of the PRC becoming represented in or becoming a member of the U.N. Another possibility is, can you get a world conference on disarmament with the PRC?

A third possibility is one that some Americans talk about occasionally, namely whether they should try to get the PRC into the Eighteen Nation Disarmament Conference. Another possibility the Americans are talking about is that they have proposed starting a dialogue with the PRC at the Warsaw discussions. As to the question of whether or not the PRC will or will not agree to a world disarmament conference, or to talk with the Americans in Warsaw, or to come to Geneva, or whether the PRC would insist upon first coming into the United Nations where her demands seem to become increasingly higher, only time can tell.

In the late 40's and early 50's before the Soviet Union became what has come to be called a "sophisticated nuclear" power, that is a big nuclear power, with a full range of weaponry, it used to argue for a ban on nuclear weapons and destruction of all stocks of nuclear weapons. This is precisely what the PRC is proposing now, a world summit conference to destroy all nuclear weapons, and the PRC goes one step further and says they would undertake not to be the first to use nuclear weapons and calls on the United States and the other countries not to be the first to use them. An Indian delegate at the U.N. said that this is the way the Communist Chinese wanted to exchange their nuclear "golfball" for the overwhelming American nuclear Arsenal which some people estimate has enough power to destroy the whole world. I don't know the answers to these questions and I don't think anybody knows the answers to these questions. What I do know is that you've got to keep working, you've got to keep arguing, you've got to keep proposing, you've got to keep negotiating, and if one approach doesn't work you've got to try another, you must never ever stop or tire. For five years we went through hundreds of meetings just on a nuclear test ban alone, which some people think is a very tiny problem as compared to the others. There were 365 meetings of the Conference on the Discontinuance of the Nuclear Weapon Tests and in addition there were the discussions in the U.N. and many others. And eventually they got the partial test ban agreement. People have asked me "How do you maintain interest, don't you get frustrated, don't you get bored, don't you get fed up after 17 or 18 years?" I answer, "Of course I do at times. So do cancer researchers, so do people who try to improve the economies of countries. Everybody gets bored and fed up and frustrated at times. But in this field you can't afford to stay bored or frustrated, you just must go on." If politics is the art of the possible, certainly disarmament is quintessentially the art of the feasible. You keep on trying; and you never know when or where you may make a breakthrough or make progress. Let me just put two thoughts to you:

In 1945, did any of you believe that in ten years or so amongst the most powerful countries of the world allied to the United States would be West Germany and Japan? In '45 it seemed inconceivable. Ten years ago, in 1956 di it seem conceivable that there would now be 36 independent countries in Africa when at that time there were only four or five? Up until a month or two before the partial test ban agreement was signed, the Soviet Union said never never would it sign a partial test ban agree-
ment. So we do not know what is possible. All we know is that we've got to try everything and keep on trying.

It's very interesting that Canada and Mexico, these two neighbors of the United States who are two countries who have potential nuclear weapon capabilities, have unilaterally said that they will never make nuclear weapons. Although as I have said "never" doesn't ever mean "never". Canada and Mexico were the ones that put forward in 1962 and 1963 in Geneva, proposals to keep nuclear weapons out of outer space, the non-stationing of nuclear weapons in outer space. At that time the Americans said they could not agree to this mere paper declaration, this prohibition without control and they also said "never never", and yet in the month of October 1963 at the United Nations, the U.S. and the USSR agreed not to orbit or station nuclear weapons in outer space and that the control was not necessary. The U.S. and the U.K. also agreed to the partial test ban with no control, after years of insisting on control. So the more I see of predictions and prognostications and prophesies, the less inclined I am to make any except to say that you can't be sure of any of them. I don't know what is going to be with the PRC, I doubt whether anyone in the world knows.

All I say is that you cannot stop, you must not stop working because someone says that this is a bar or an obstacle to agreement; you just go ahead. And I certainly agree with you that all sorts of areas of social, psychological economic, political; all sorts of considerations enter into this. This is a whole complex of problems, not a simple question of China's seat in the United Nations. Not a simple question of nuclear banning or not of being the first to use nuclear weapons. This is a problem which, as Mr. Rusk said the other day that, at least from the American point of view, the problem of the relations of the United States and China or the relations of the world with China was going to occupy the rest of this century. Now you said 15 years, 25 years, I have heard it said in the United Nations ever since 1949 that the PRC must be admitted to the United Nations next year. What is it now? 17 years? I don't know, it could happen next year or the year after, or not for some years.

MAJOR PROBLEMS OF DISARMAMENT Wm. EIRSTEIN

MON. 20/6 11:30

The General Assembly several times has called for non-proliferation of nuclear weapons. In the last session they went into considerable detail on the subject. They called for non-proliferation and laid down five principles. Firstly, that any treaty for non-proliferation should be void of any loop-holes, whatever that means. The Soviet Union said that that means no nuclear sharing in NATO and the United States said since the U.S. proposals for nuclear sharing in NATO don't involve dissemination, so that the non-proliferation treaty would be void of loop-holes, even with nuclear sharing in NATO. Nobody quite knows what it means specifically or precisely. The second principle is that any treaty for non-proliferation should embody a balance of mutual responsibilities and obligations for the nuclear and non-nuclear powers. There is considerable discussion in Geneva in what this means; how do you tell what is a balance of mutual obligations, some of the non-nuclear powers lay down as a condition for this balance that the nuclear powers should begin some nuclear disarmament; others say they would be satisfied with some declaration of intention from the nuclear powers that they would go ahead with disarmament measures. There is a spectrum of opinion among the non-aligned. Some say that the nuclear powers must agree to an underground test-ban because that imposes real sacrifices on the nuclear powers. Another one of the five principles was that the non-proliferation treaty should lead to and help facilitate the whole concept of general and complete disarmament. Another principle was that it should not bar regional denuclearized zone agreements among those who want to go ahead on their own. The fifth principle was that the treaty for non-proliferation should be subject to effective safeguards. All these have been discussed at considerable length. In Geneva we now have for the first time two draft treaties, the Soviet draft treaty and the American draft treaty and there has been much discussion of them. One problem is the problem of nuclear sharing, whether or not any nuclear sharing arrangement in an alliance would be dissemination and would be a bar to a treaty. The Soviet Union says: "yes" and the United States say "no". One question not fully explored yet is that regarding consultive arrangements or a NATO committee for consultations without an actual nuclear force. Another area here which is subject to a good deal of discussions as what about the whole problem of guarantees by the nuclear powers of the security of the non-nuclear powers. According to Mr. Kosygen's letter the USSR would be prepared to guarantee not to use nuclear weapons against the territory of any non-nuclear state that had no nuclear weapons on its territory. There have been relatively vague statements by the United States that they were prepared to give nuclear

guarantees against aggression or threats of aggression from a nuclear power to a non-nuclear power. The whole question of guarantees is a big question. Then there is the question of what about controls and safeguards. Here there has been some real movement; the Soviet Union has hinted it might be willing to cooperate in considering provisions for IAEA safeguards in connection with a non-proliferation treaty. Then there is the whole question of what about the right of withdrawal in case of a violation or real fears by a country, that its vital security was endangered, should the right of withdrawal be automatic or through the U.N. Security Council or how? There is lots to talk about yet. The question of an underground test ban and the non-proliferation treaty are at the very top of the international agenda.

I had hoped that I had time to go into some of the 15 various collateral measures. I listed them all for you I think the other day, but to go through all of these 15 and explain the basic positions would take a little time. Since these measures are not really at the top of the international agenda but a little further down, that perhaps they don't need to be discussed at such length at this stage. The main American proposal here, is for a cut-off or a cut-back of production of fissionable materials and the establishment of IAEA controls. The main Soviet proposals have been the withdrawal of foreign troops and bases, and the prohibition of the use of nuclear weapons, and in the first place an undertaking not to be the first to use them. In 1961 there was also the so-called "Ethiopian resolution" that consisted of two parts: the first was a declaration, saying that the use of nuclear weapons was a violation of the Charter; was contrary to the laws of humanity and to international law, and any country which used them would be regarded as committing a crime against civilization and humanity; that was adopted as a declaration by the General Assembly over the opposition of the Western powers. They said that it was a mere paper declaration and had no validity, because you could not just declare such a thing without having general disarmament or as part of a verified system. They said that, until there was controlled general disarmament, nuclear deterrence provided the rough basis of stability on the continuance of which the peace of the world depended. Nevertheless, this declaration was part of the resolution adopted by the United Nations. The other part of that resolution called the Secretary General to conduct an inquiry on convening an international conference for the purpose of signing convention prohibiting the use of nuclear weapons. In response to his inquiry, the Sec-

retary General received 62 replies from over 100 members of the United Nations. About 33 replies favored the holding of such a conference, 26 were negative and a few were non-committed or favored postponement until after the ENDC had considered the whole disarmament question.

INTERNATIONAL SUMMER SCHOOL ON DISARMAMENT AND ARMS CONTROL

*Seminario B-2h equipo 1966*IDEOLOGICAL WARS AND PEACEFUL CO-EXISTENCEM. Markovic: Wednesday, June 22 -- 16:00

I

After Hiroshima and subsequent technological revolutions in the field of nuclear weapons an entirely new situation for the human race has arisen. This new historical situation can be characterized in the following way:

A. Man has created the capability of destroying most of the human population and practically all civilization. According to Kahn by 1970 it will be possible to construct the "doomsday machine" -- a device capable of destroying the world automatically.

B. Man has lost control over his most terrifying product. While an unprecedented arms race is getting ever more impetus from the conference halls on disarmament, words, words, and more words are pouring out and in the best case, they end with the lamentations about the clock of doom approaching Mid night.

C. For the first time in history no defense from an attack with such arms is possible. Until now the invention of a new powerful weapon has always been followed by the discovery of some satisfactory protection mechanism. Now, even the most powerful and most technologically advanced countries are utterly helpless against a nuclear attack. That's why the problem of defense, in the proper classification of the word, has been discarded and replaced by the problem of retaliation.

D. As a consequence, for the first time in history any distinction between military and civilian population has disappeared. Millions of innocent people, women and children have become hostages for the decisions of their leaders.

E. The existing military technology has put such high demands on the speed of decision making that even the most crucial decisions involving life and death of many millions of human beings must be taken by political leaders almost instantly. It is true, there has never been much democracy in this world, especially in war. However, in comparison with the times when at least, parliaments voted on war or peace, a si_

tuation in which not even cabinets can be consulted, devoids the concept of democracy in any sense. ⁽¹⁾

F. All civilization has been, besides other things, the result of human struggle for control of blind, unknown and uncontrollable natural and social forces, for maximum possible elimination of chance events in the life of nations and the human race as a whole. Now, after so many amazing successes in discovering almost hidden natural regularities and introducing order and security into human life, the moment has come when the very survival of mankind increasingly depends from some pure accident (human or mechanical error, false alarm, unauthorized behavior of some sick individual, miscalculation, etc.) to the extent of which the production of nuclear weapons will become cheaper and simpler in the very near future. They will inevitably be widely distributed and the probability of such a fatal accident will increase. Such an overwhelming role of chance in human life throws us back into prehistory: our situation is comparable to the helplessness and dependence on accident of our ignorant and primitive ancestors.

If we wish to embrace all aspects of this new situation by a single formula, we might say: this is a situation of universal and permanent insecurity for each individual at almost every place at every moment of time. It is true, there have always been situations and conditions under which man was bound by experience, in a relatively prolonged interval of time, the nightmarish feeling of living on the verge of nothingness. However, in the course of history, man has gradually transformed the world to such an extent that he was able to re

(1) Philip Noel-Baker is quite right when he gives the following comment of Kahn's contention that the United States and NATO would reluctantly envisage the possibility of one or two million fatalities in order to prevent a surprise attack. "Who has agreed to that? The cabinets of the United States and of the NATO countries? Their Congresses and their Parliaments? Their electorates? Dr. Kahn does not tell us but, I venture the confident belief that no cabinet of any democratic country has decided to risk a war in which the losses would be as great as that." (Arms Control, Disarmament and National Security, ed. by D. G. Brennan, N. Y. 1961; p. 454.)

cognize conditions in which he can overcome anxiety and count on the future and where every sacrifice acquires a meaning be cause the day would come when its fruit would ripen? Nowadays, a thinking and feeling human being, who was not compelled by other factors in our present civilization to behave and to be manipulated as a thing and not as a man, finds himself again in a state of permanent anxiety, condemned to live permanently on the very edge between being and nothingness; in full uncertainty between any definite sense of the future and in the total absence of the future and therefore, all meaning in the present life. Clearly, the problem is not only the survival of that trembling flame of civilization on the verge of non-existence. What is in the question is also the quality of existence in the conditions of permanent insecurity. Nothing is able to disintegrate a community, to undermine all their values, as the lack of a sense of the future.

II

What is the possible outcome from this situation?

It has been widely recognized during the last decade; at least at the generally theoretical level, that the only out come might be universal acceptance of the policy of peaceful co existence in international relations. Various people and coun tries have accepted this principle more or less enthusiastically or more or less reluctantly, but hardly any serious politician or scientist was ready to reject it in its general form. Some have accepted it (for reasons which we will analyse later) as a tactical formula only, as mere propaganda device; some make serious efforts to secure its realization in international life. Naturally the former tend to preserve it in the original vagueness and abstractiveness, whereas the latter endeavor to make it as concrete, operational and as precise as possible. Some wish to retain its literal meaning and to interpret co-existence as mere passive juxtaposition of the hostile blocks of the states. Others reject such cold war interpretation and assign to the concept, a much wider and richer meaning. In Yugoslavia, for example, the concept of peaceful co-existence embraces, besides others, the following elements:

1. active struggle for the preservation of peace against all those powers which tend to dominate other countries and to use military and economic force in order to preserve the existing privileges and to acquire new ones

On account of the rights and interests of other nations;

2. active struggle for the protection of independence of all countries and the support of self-determination of all nations;

3. support of full economic, political and cultural development of all countries, particularly aid for an accelerated economic development of developing countries.

4. Rejection of any fixed division of the world into military, economic or political blocks, which implies a demand for growth of economic cooperation, political independence, free travelling, general increase of communication, scientific and cultural exchange and in general, mutual collaboration of the countries with different economic and social systems and the development of an attitude of openmindedness towards the world as a whole. (2)

It is easy to realize that even in such an elaborated form the principle of peaceful co-existence hardly contains any essentially new elements. All this in one form or another was already expressed in the Charter of the United Nations and in fact, represents part of a long humanist tradition which developed from Stoic philosophy onwards.

However, we must take into account that readiness for opening towards the world may be the function at the level of technological development and economic strength, and that in general, readiness to accept various progressive and humanistic demands depends on the nature of the existing social system and ideology of the ruling elite in a given country. Therefore, if we want to contribute anything toward specification of at least some conditions which are necessary for realization of peaceful co-existence in practice, the first step which we have to take is in establishing the lowest common denominator which could be generally accepted as the concept of peaceful co-existence. This, I hope would be the idea of the renouncement of the use of force in international relations and the idea of non-interference in internal affairs of other countries.

Our problem consists in the obvious discrepancy between general acceptance of these ideas and the actual facts of international politics. The very ones who agree with them and make use of them in abstracto, behave in an entirely opposite way in concreto in their physical practice.

The question is now: whether mankind is condemned to this fatal discrepancy which would inevitably lead to its collective suicide or is there at least one factor which has decisively influenced recent history but which people can consciously modify and in such a way introduce a major change in the existing situation.

III

The best method to discover such a factor would be, as it seems to me:

1). to analyse the causes of those great international political crises which led some great powers to interfere in internal affairs of other countries and even to use military force;

2). to analyse the causes of failure of disarmament negotiations, especially in those situations when both sides apparently reach full agreement.

Such an analysis of which I have not the sufficient time at my disposal to expand in detail, leads to the following conclusion:

Both military interventions of great powers and their incapacity to reach agreements even in the most favorable moments in the history of disarmament negotiations for example, in 1955 and in 1960, have decisively influenced the deeply rooted belief on each side that the fundamental interest which underlines all activity of the other side, is to destroy her in any possible way as she would not have to pay a great price for that. Every gesture of the other side and indeed, every event in the international political arena has, therefore, been interpreted and evaluated during the last twenty years, primarily from the point of view of whether it strengthens or weakens the positions of the main opponent and what would be the consequences for a possible future clash.

For example, there is ample evidence that Krushchev did not order his troops to attack Hungarian rebels in 1956 just because they wanted to be politically independent, even less because they wanted to end the economic

exploitations of Hungary, and not even because they wanted to leave the Warsaw Pact keeping the Soviet troops out of their country. They did not attack Yugoslavia which was uterly isolated in 1948; they did not intervene in Poland in 1956; their troops left Rumania in 1956, they stopped exploitations after 1956; they allowed a considerable political independence to some East-European countries. The essential motive for intervention in Hungary was the belief that, in given circumstances this country would inevitably become capitalist with the ultimate result that the Russians would soon have American troops on their borders and bases.

American interventions in San Domingo, Vietnam and elsewhere were primarily motivated by purely ideological belief that such revolutions are provoked and encouraged by subversive activity of persons who are agents of international communism and who gradually tend to destroy "the free world". As Munich has demonstrated, the policy of appeasement leads nowhere, therefore, the only alternative is to be firm and strike back. Of course, the real objective is not to prevent new dictatorship nor to help to restore really democratic governments. General Kee is obviously a dictator whereas there can be little doubt that in a United Vietnam, any government elected by western standards would be Communist - that is why the United States opposed the application of the Geneva Treaty on Vietnam. The real reason for intervention cannot be found in some Marxist explanation of the old, dogmatical type: in terms of struggle for sources of new material, markets and cheap man-power. Such clichés are totally inappropriate to explain such an important process in modern history as decolonization.

To be sure in all international conflicts in which one or the other side used force, there was also a clash of certain particular economic, political and other interests. Ideological beliefs are expressions of interests in the first place. However, they are one-sided, abstract and stereotyped expressions of interests. They are unconscious realizations, therefore, uncontrollable. In addition they are much too static and there is always a large element of doctrinal law in them. That is why thinking mediated

by ideology is not only never true to the facts, it is also rarely true to one's real interests in the given moment and under specific historical conditions.

IV

When we analyse the long frustrating history of disarmament negotiations, we easily find a confirmation for both theories which I have just mentioned:

A. that ideological considerations have always played decisive roles both in formulating ones own proposals and evaluating those coming from the opponent;

B. that later experience amply demonstrates inadequacy of many ideological assumptions in relation to the genuine interests of each side.

As for A:-- two kinds of behavior were typical for the representatives of the US and the USSR in all those negotiations. one prevailed during the period of the cold war until sometime after Stalin's death and was best described by Bertrand Russell:

"Each side comes forward with a proposal which, if adopted, might have considerable merit, but each side takes care that the proposal should contain something that the other side is sure to reject and neither side is willing to seek a reasonable compromise, since that would be thought to be cowardly appeasement. " (3)

Among many examples of this type of behavior one might mention the Baruch Plan in 1946 and the Soviet reaction to it. The essential element of this plan was the proposal to establish an International Atomic Development Authority under the United Nations, which would have a monopoly in mining uranium and thorium, refining the ores, owning materials and constructing and operating plants necessary for the use of nuclear power. It was quite obvious that the Russians could hardly consent to an envisaged amount of inspection; to give up their efforts to reach atomic balance and to rely entirely on the UN, where at that time they had only five out of fifty votes.

2. Bertrand Russell, Has Man a Future ; Penguin Books, 1961 p. 32

So, they flatly rejected the plan and the proposal to ban the bomb and destroy all the stocks. In view of Soviet superiority in conventional armaments and the Soviet attitude it seemed to the Americans utterly non-serious and in-sincere.

That is how history began. Later, Americans used to insist starting with conventional disarmament and where they were weaker, to agree first in the mechanism of control and inspection and then on disarmaments which to the Russians always meant organization of espionage without disarmament; Eisenhower proposed in a letter to Bulganin in 1956 to stop any bomb-fuel production but, it was clear that such a cut-off would freeze the advantage of the U.S. According to Frye, "the tactic of linking the cut-off to other disarmament measures came to be used as a protection against premature agreements on the other measures." (4)

On the other hand, Russians used to insist on priority of nuclear disarmaments - where they always were weaker while proposing conventional disarmaments, they kept expressing the reduction of armed forces by $1/3$ or by some other fraction (and not by level ceilings) which would help to preserve existing superiority; they insisted on the priority of agreement in principles although they knew well, how little the Americans appreciated broad, unverifiable and uncontrollable statements and how much they insisted on agreement in technical and partial problems.

The underlying structure of all such behavior on both sides was, on the one hand, lack of any trust, utter suspicion, fear that the enemy might launch a surprise attack any moment and on the other hand, a desire to speak from a position of strength and to demonstrate firmness and toughness. It was assumed that one had to deal not with the ordinary enemy but, with one who is especially aggressive and perversive, one who is the incarnation of all evil, who belongs to a Satanic world, an anti-world which is entirely incompatible with the ordinary decent world. Those two worlds must inevitably clash and one will be destroyed. One must be fully prepared for this clash and the only way to survive is to increase ones own armaments as much as possible.

4. R. Frye, Characteristics of Recent Arms Control Proposals and Agreements, (Arms Control, Disarmament and National Security) ed. by D. G. Brennan, N.Y. 1961, p. 77.

A new more hopeful period began in 1955 which for the US was one of those good quiet preelection years, and for the USSR, a period of reappraisal of Stalin's foreign policy and the inauguration of a new more flexible and realistic attitude in international relations. By this time, both sides possessed thermonuclear war weapons and became aware that a stability of fear had been reached. A breathtaking arms race did not increase national security, on the contrary, however this new situation gave rise to a new idea, namely, that the anti-world would not attack. This resulted in a certain change of attitudes in the negotiations: what in the days of the cold war was sheer propaganda struggling for points in the world's public opinion replaced now, by a genuine and sincere search for solutions. Onesided purely pragmatic proposals with full disregard for the opponents interest and with full awareness that they contain elements which are totally unacceptable for him tending to disappear.⁽⁵⁾ Both sides adjusted to each other and at least agreed that the opposite extremes on which they used to insist previously (priority of nuclear versus conventional disarmament; priority of starting with actual disarmament versus establishing first control mechanisms, etc.) must be taken as inseparable moments of the whole complex which has to be resolved gradually, keeping the necessary balance, but - as a whole.

And still, except the Moscow partial test ban treaty in 1963, not a single step toward real disarmament has been made so far, in spite of the fact that at least two times, in 1955 and 1960 the positions of both sides have been amazingly close. When one compares Anglo French proposals at the United Nations Disarmament Sub - Committee submitted in modified version April 19, 1955 and the USSR proposals from May 10, 1955, one notices the following similarities:

(1) Both proposed man-power ceilings of between 1 and 1.5 million.

(2) Both proposed nuclear production cut-off to begin when 50 percent of the conventional force reduction has been made.

(3) Both proposed a complete ban on the use of nuclear weapons and abolition of all existing stocks after 75%

5. Surely there were exceptions such as Eisenhower's "Open Skies" plan offered at the Summit Conference in 1955 or at the Russians insistence in 1958 that agreement should be first reached in general political problems before discussing any technical details.

of conventional force reduction has been made.

(4) Both proposed to establish an International Control Organ with its own staff of inspectors having the right to access at all times and keeping all objects under control. (6)

It is clear that Russian proposals meant in fact, the acceptance of British - French proposals. But then, the Western representatives withdrew their proposals. According to Jerom Weisner the reason for this extraordinary act was a growing fear of some American experts that the declaration about the size of nuclear stock piles cannot be conclusively verified and that the problem of the clandestine stock pile could not be solved. (7) But according, to Frye, once the Soviet Union was ready to accept inspection which would suffice to detect preparation for any major nuclear aggression, the United States said friendly and publicly later that year, that it no longer favored the elimination of atomic weapons that it wanted to focus (8) on the two ways to make the balance of power more stable.....

At the Geneva Disarmament Conference, Soviet proposals from June 2, 1960 and the United States proposals from June 27, 1960 again contain amazing similarities, not only in principles but also in many technical details. Especially important was the recognition by both sides of the need for an international militia within the UN to preserve world peace. Soviet proposals confirmed readiness to accept international on the spot control already in the first stage of disarmament but specified its tasks as the control of actual operations of disarmament already in the first stage, (destruction of missiles and other delivery devices, elimination of military bases and withdrawal of foreign troops, destruc

6. Philip Noel Baker, The Arms Race, London 1958.

7. Jerom Weisner, Comprehensive Arms Limitation Systems, (Arms Control Disarmament And National Security), N.Y. 1961 p. 228.

8. William R. Frye, op cit. p. 76.

tion of missile launching sites, etc.) The U.S. proposal postponed all such operations for later stages (without mentioning withdrawal of foreign troops and dismounting of military bases). In the first stage it insisted on conventional forces reduction, establishment of an International Disarmament Control Organization, notification and inspection of delivery systems, fissionable material production cut-off, etc.

So it turns out that the differences in time phasing are very essential and that they disclose old well-known differences in approach urge for disarmament without quite satisfactory control on the Soviet side, emphasis on inspection and control without much real disarmament on the American side. As is well-known the whole Eastern delegation walked out on June 27th. The impression remained in the real interest for serious negotiations and for reaching an agreement on both sides was less than the verbal manifestations in the texts of the proposals.

How to explain that inspite of enormous risks and costs which both great powers subject each other to, they fail to find a common language? It is true, they have many conflicting economic, political and other interests but, these are not of such a kind as to justify such a tremendous day-to-day waste of the best natural resources and human energies, not to speak about the constantly increasing danger of mutual annihilation. When one considers those factors which immediately influence negotiations and tend to aggravate reaching an agreement such as: needs to improve technology of weapon production, pressure of military and conservative people on both sides, political reasons especially taking care of the interests of the such allies as China and Germany (east and west) one invariably finds ideological considerations underlying them. At the root of all interpretation, evaluation and decision-making, there is the basic belief that Communism and Capitalism (or the so-called free world) are incompatible social systems and that any co-existence is only temporary. The only change in relation to the period of cold war (1945-1955) is that now, few well informed and serious people in both countries believe that a premeditated surprise attack from the other side might happen at any moment. But, the attitude which still prevails is that in case of any considerable change (including those resulting in a possible process of disarmament) might upset the existing

balance. So the other side would strike back the first moment it would estimate that the price was not too high.⁽⁹⁾ This is then the ground motive for both fear and a feverish arms race. Both effectively prevent any real step towards disarmament.

V

Therefore, one should ask the following questions:

(1) Is peaceful coexistence in the present historical situation really acceptable to both leading world powers?

(2) Granted that it is, is peaceful coexistence really possible under conditions of ideological war?

As to the first question, there is not much to be said. If the fundamental interest of at least one of the big powers really is to dominate the world so that the policy of peaceful coexistence is really acceptable to her (although she might find it useful propaganda device and pay lip services to it), then we are doomed. Any fight for peace can only postpone the holocaust. Any negotiations will not lead to real disarmament, and without disarmament one day one of these bombs will inevitably go off. However, in spite of the fact that there are groups and circles on both sides that think about a world socialist revolution or a world democracy in terms of military conquering the rest of the world, and in spite of the fact that from time to time great powers make impressions actually behaving exactly that way, their strategies are based on optimistic ideological assumptions. Our world is better and morally superior. Evil (communism or capitalism) has no historical future because it is evil and so it is doomed; even without our military intervention. But while it is on earth it will tend to destroy us and we must protect ourselves. This basic optimism and basically defensive strategy on both sides provides ~~room~~ for relatively sincere acceptance at least in its more general and meager form. Even one who is skeptical toward my hypothesis that prevailing attitudes on both sides are basically optimistic and defensive would have to grant

9. "It came to be believed that the USSR might attack the West as soon as she estimated that she had a marginal superiority in military power her intentions would become equal to her capability. On this view the slightest falling behind of the West in military power would precipitate a holocaust."

-Blackett, Studies Of War, Edinburgh 1962; p. 94.

that now-a-days even mediocre intelligence suffices to realize where any policy comparable to the one of fascist powers of World War II would lead. Not to admit such a mini mum amount of common sense to the opponent would in itself constitute an instance of ideological thinking.

VI

So the more interesting question is (2). Is it possible to advocate peaceful coexistence and in the same time lead an ideological war? It seems to me that experience has shown and theoretical analysis can demonstrate that this is plainly impossible.

By leading ideological war, I do not mean just expressing the view of a certain type of society is not satis factory from the economic, political, moral and any other point of view, or according to my standards of evaluation an other social system is preferable. If we by "ideology" mean theory about an accepted ideal; choice of a value orientation, a projection of future for which we are ready to engage and consequently, a critical attitude toward existing social reali ties everybody ~~has~~ or should have a definite stand on these matters. Far from being blind and irrational, ideology in this sense is one of the preconditions of all relationship as a concept of rationality is relative to our goals and ultimate values.

Unfortunately, the term "ideology" usually covers an entirely different structure of thought and behavior, for which it is characteristic that our group interests, emotions and indeed sometimes most irrational, blind, animal-like sub conscious urges designed in the form of indicative statements, making the impression that they refer to obvious facts, being accepted, therefore, as indubitable truths. All ideologies in this sense are dangerous because they create illusions and prejudices and they are all conservative because their func tion is to rationalize and preserve the interests of various social elites and because they are too static and necessarily left behind the facts. Being based on interests and emotions rather than objective observation and critical thinking ideologies tend again and again to reproduce dualistic pic tures of the society and the world with extremely sharp disting

tions between white and black, good and evil. Such an extremely simplified dualism is not only the result of utter lack of objectivity of those whose interests and needs it should serve to promote but also, the consequence of simple psychological fact that very broad-minded people can be moved to action solely by very simple, easily understandable and emotionally - loaded ideas. In time of great social transformations and vastly increased possibilities of successful struggle for ordinary people's souls - due to the revolution in the field of mass media of communications - it is no wonder that all the world is virtually flooded by the most outrageous, most infantile products of ideological thinking. There is no need to go into details to prove how dangerous and irresponsible are such colorblind and utterly belligerent presentations of quasi-reality in a world full of very destructive arms.

It would not be realistic to think that there is any power in the world which can in a reasonable interval of time remove ideologies or reduce dangerous ones of the type II to more rational and scientifically based ones of type I. Ideologies are part of our world, they look ghostlike only from the political point of view of theoretical reasons because there are so few reflections of reality. They are firmly entrenched in reality because they are expressions of interests and needs of various social groups, and because they are guiding lines of all activity of so many people that they have really acquired the strength of material forces.

What can be done is: (1) to show that in the present historical conditions, nobody can expect both to survive and to stick to all sharp distinctions of his ideology with all implied aggressiveness and fear and suspicion towards his ideological opponents; (2) to show in a single and very convincing way what is untrue in his declarations and what are the elements of common interest without asking him to give up his ideology as a whole and his preferences of one type of society to the other.

The first is clear by now, I hope. I might quote some authors who came to the same conclusions. For example Jerom Wiesner says: "Experience indicates that individual projects or proposals, no matter how promising always will be evaluated in a negative state of mind born of fear". ⁽¹⁰⁾

10. Jerom Wiesner, op.cit., p. 199.

William Fox comments on the widely held opinion in the U.S. that "one cannot trust the Russians" and goes on: "Trust - prerequisite. to cooperative or contracted relations hardly operates at all between the first ranking states of our era Lack of trust drives them to bargain so closely and prevents them from moving toward agreement except by hesitant and short forward steps." (11) Even Herman Kahn, who by his over optimistic and pedantic calculations of the possible outcomes of the nuclear war or by his warnings about the dangers of arms reduction and arms control has not made a great service to the creation to the new international climate of trust and confidence, is right in saying: "The big thing that the Soviet Union and the United States have to fear from each other is fear itself". In concluding: "it is most unlikely that the world can live with an uncontrolled arms race lasting for several decades." (12)

VII

As to (2) the following elements in the Soviet ideology on the one hand and the American ideology on the other seem to me to be very dangerous, entirely unconfirmed by facts and in fact, redundant from the point of view of the genuine interests of Soviet and American people:

In the Soviet ideology:

(a) A new social system inevitably replaces the old in the new world and in a revolutionary way. Therefore, the possibility is excluded that the old might adjust and survive in a modified form. What follows logically, although never said explicitly, is that peaceful coexistence is a transitory phenomenon. This theory has been confirmed by some past experiences, especially from the periods of the transition from the periods of transition from slavery to feudalism and from feudalism to capitalism. However, many facts from the present transition period seem to indicate that the two great social systems have been adjusting to each other and gradually transforming in rather surprising ways (increasing role

11. William Fox, Political and Diplomatic Prerequisites of Arms Control, "Daedalus" 1960, p. 1005.

12. Standard Research Institute Journal, Stanford, Fourth Quarter 1959, p. 139 -140.

of the state in both systems; introducing of planning and various social funds in capitalism; emphasis on market economy and personal property in socialism, etc.)

(b) As capitalism is doomed it has no other choice but to use every means, no matter how desperate it might be, to stop the whole of history. So it will certainly try to destroy the leading socialist country as soon as the occasion arises.

This generalization again is not without any support. It has a history that every revolution was followed by counter-revolution. There was counter revolutionary intervention in Russia in 1917-1922. There can be little doubt that the advance of Fascism and preparation for the attack on the U.S. was directly or indirectly supported by some circles in the West. However, modified capitalism has demonstrated such a surprising vitality and ability to develop productive forces (which according to the Marxist theory main criterion of vitality) that is not all clear now whether, why and how is this modified social system doomed. And even if it were, their ruling elites are not aware of the fact that now-a-days and it is only what matters when we want to predict their behavior.

(c) As progress is possible only through the struggle of opposites. As every balance of force is only relative a genuine revolutionary must always be militant and uncompromising. It is true under present conditions he cannot manifest his revolutionary zeal in military combat, however there is no need for restraining the field of ideology.

Philosophical assumptions here do not justify the conclusions. Struggle and completion can take very different forms including very noble and creative ones. Ideological militancy as manifested by many apparatchiks and propagandists during the last two decades certainly did not show any traces of creativity; it usually goes hand in hand with the most obvious form of dogmatism and intellectual rigidity.

In American ideology:

(a) International communism is a conspiracy against the free world. Communists want to conquer all countries and they will attack whenever and wherever they can. When they cannot attack openly they will use agents to reach the power by subversive activity.

That even this piece of nonsense can be illustrated by some facts only proves the wisdom of Hagel who said once that there is no such silly statement for which some

good reasons could not be given. It is the fact that in some Eastern European countries in the final stage of World War II, socialism was introduced mostly due to the action of the Red Army which liberated those countries from German occupation. It is also the fact that some communists in the U.S. And else where were spying for the U.S. However to build up some fun damental principles on those facts would, among other things, prove total lack of the sense of history. It is the essential part of the Marxist theory and of the way of thought of every genuine contemporary revolutionary that real socialist revo lution can only arise as the result of the internal struggle of forces and internal change - never as the result of foreign intervention. That is exactly the process which is taking place in many Asian, African and S. American countries, in the conditions of utter misery and corruption. Far from being anybody's agent, leaders of these movements strive to reach full independence, including independence from the allies.

(b) People under communist rule are slaves. It is our moral duty to help them whenever we can and especially to protect all other nations from the real danger.

This willingness to make other nations happy against their will and to assume unauthorized by any World organization, the role of World policeman is especially dan gerous. But even aside from the fact that who is to judge whether people from another continent with entirely different traditions, habits, needs, in entirely different conditions, etc., will be better off with what we press on them according to our standards of evaluation with what we already have or envisage to reach. That is why the behavior of Buddhists in Vietnam is such a riddle to many Americans. The only pos sible solution is that each person must be left to decide for himself whether he will support any given government or fight against it. After all, there is some wisdom in the idea of a philosopher that each people deserve to have the govern ment which they have.

(c) The experience of Munich and Pearl Harbor show that it is dangerous and ineffective to be soft on communists and try to appease them. We must stand firm and draw a line beyond which no concessions can be made even at the risk of war.

One can understand why the shocking experience at Munich and Pearl Harbor is so vivid in the minds of the pre sent ruling group of Americans. However, here we have the

case of a completely misleading analogy. Both Hitler's Germany and Japan were hungry for space and raw materials. Their interest lay primarily in outer expansion which was clearly reflected in their ideology. Soviet Union has more space and natural resources than she can organize and use; her main interest lies in internal growth and evolution - which again really follows from the Marxist ideology, which is fundamentally an ideology of internal social transformations.

VIII

The conclusion is then, that ideological war must stop if we seriously want to secure peaceful coexistence and survive.

There was a lot of discussion whether trust is a condition or a consequence of arms control and disarmament. Putting the question in this way leads nowhere. Both depend on the other factor. Some of these factors are too fixed, objective and outside our possibility to change them by our actions within a reasonable interval of time. Such are real conflicting economic and political interests, pressures of conservative militaristic social forces in both societies, development of military technology which in itself makes the security problem increasingly complex. In addition to such relatively constant factors there is an important variable which probably can be sufficiently modified by our action, and that is ideology. Nothing can be changed in the fact that they would win souls and direct activities of millions. Something can be changed in the way they do that - and that is, so far as I can see the only possible major change in the present situation which can restore the necessary minimum of mutual trust and help to create a new atmosphere, a new way of thinking and approaching to all events of this necessarily complicated world. That is exactly what was demanded in the first Pugwash statement "We have to learn to think in a new way. We have to learn to ask ourselves not what steps can be taken to give military victory to whatever group we prefer, for there are no longer such steps: the question we have to ask ourselves is: what steps can be taken to prevent a military contest of which the issue must be disastrous to all parties?" (13)

13. Bertrand Russell, Albert Einstein, An Appeal for the Abolition of War, Sept. 1955, "The Atomic Age" ed. by Grodzine and Rabinovitch, N.Y. 1963.

Those elements of existing ideologies which contradict the very principle of peaceful coexistence must be eliminate because they are obsolete and no longer correspond to the facts or to the real interests of those who profess them.

Even the purely theoretical reappraisal of existing ideologies, critical analysis and rejection of all black and white dyclotomies would be a very valuable contribution. Much more important would be the positive search for common interests, increase in communication on all levels and creation of a new climate in mutual relations. The old Latin proverb must get new form: "Si vis pacem para pacem."

INTERNATIONAL SUMMER SCHOOL ON DISARMAMENT AND ARMS CONTROL

The Role of Science in Reducing International Tension

(M. MARKOVIC: Thursday, June 23, 9:30.)

I

Any discussion about the role of science in reducing international tension, and in general, in making the world a better place to live in, depends upon what we understand by science, which of its contradictory tendencies we take as essential, how do we apply its results.

Science, according to its definition aims at establishing truths about nature, society and the individual man. But how to conceive truth?

In contemporary science, there is a tendency of increased division of work and of ever more narrow specialization. The result of such a specialized inquiry of a strictly isolated, fixed problem will be true if it has been proved and empirically verified. But, it will only be a partial incomplete truth which has not taken into consideration many essential elements of the given fragment of reality. Such an incomplete truth can be fruitful in its practical application: it can secure the solution of an important technical or social problem it can considerably increase the efficiency of our action. But, this efficiency can be for man or against man. Nuclear weapons are the result of a one-sided development of the initial theoretical knowledge about fission and fusion of the atomic nucleus. The history of nuclear arms race is the best example of the abuse of science, and of the tragic alienation of some brilliant products of the human mind. A comparable abuse of science we find in ideological propaganda. The most effective and therefore most dangerous propaganda is not one which is based on untruths and is therefore in an obvious conflict with science, but one which, for the rationalization and justification of the interests of the privileged social groups, uses partial truths established by science.

Science would be helpless against such abuses, if it were atomized, disintegrated and disinterested in the problems of wholes at all levels. Fortunately, there is in science now a strong opposite tendency toward synthesis, toward integration of the results of partial inquiries within the framework of big coherent systems.

In science one must carefully distinguish between pure experts and genuine intellectuals. An expert remains at the level of partial knowledge, at the level of correct application of the general theoretical and methodical principles to the solution of a special problem - in one word, he remains at the level of technique. A genuine creative intellectual in the field of science critically examines and further develops the very theoretical foundations, he establishes important connections and generalizations, creates new forms and new systems, tends to penetrate into the full meaning of scientific results by incorporating them into broader cultural and philosophical contexts of his time.

This brings us to the other essential polarity of science. Is truth pure factual knowledge neutral with regard to all values or is it knowledge oriented toward the realization of general human values such as freedom, justice, development, abolition of alienation, etc?

In contemporary science there is a very strong tendency of positivism, that is the view that the sole function of science is to describe and explain what there is, and eventually, if at least some laws are known, to extrapolate what there might be. All evaluation in terms of feelings, needs, moral standards, etc, are basically irrational and must be discarded. Such a conception of science is perhaps the expression of the alienation of a good part of the present day intelligentzia from the general goals and values of their society. This conception of science is valuable as a counterbalance to a constant tendency in contemporary society to reduce science to a mere servant of ideology and politics. But, such a passive resistance in the absence of any active one, - is, after all, quite acceptable to the ruling elites because pure positive knowledge can always be interpreted and used in a most profitable way with the final consequence that society would be devoid of its critical self-consciousness.

On the other hand, some humanitarians, Existentialists and recently some Marxists extend their criticism of positiv-ism to the science as a whole. By asserting that science according to its very nature is not and cannot be anything else but description and classification of facts, calculation and a cold aloof interpretation of what there simply is - they help to re-affirm this prejudice about science and lose one of the most powerful allies in the struggle for the humanization of the

contemporary world.

In fact, true intellectuals in the field of science do have a certain value orientation; they have a critical distance towards the existing world's realities. They are very much concerned about the way the products of their mind will be interpreted and practically applied; they are seriously concerned about the human sense which they will eventually acquire. That is why all leading physicists of our century: Einstein, Bohr, Planck, Heisenberg, Schrödinger, Born, De Broglie, etc., were also philosophers and humanitarians. Many of them and their pupils took an active part in the struggle against Fascism and against the abuse of the achievements of nuclear science. All actions of scientists to prevent the use of atomic bombs in 1945: Einstein and Szilards letters, the Franck Report, petition to the President of the U.S. of July 17, 1945 and after all, the very fact of existence and development of the Pugwash Movement; is the best proof that scientists are not only concerned with the accumulation of knowledge. Providing knowledge (which is the necessary condition of technological and all other developments) is just one function of science. Another equally important function is a critical evaluation of all unsatisfactory aspects of contemporary human condition and a thorough scrutiny of the optimistic future changes which have already been made possible by the achievements in the present.

There is no doubt that the fundamental values and assumptions of each individual scientist depend on the fact that he belongs to a given nation and was educated in a particular tradition and in a particular social climate. However, truth is universal, science is a universal human product, it is guided by a universal humanist tradition. A true scientist will tend to speak as Man and will tend to overcome all limitations of nation, race, class or religion. This is the language that one finds in the first Pugwash statement signed by Russell and Einstein:

"We are speaking not as members of this or that nation, continent, or creed, but as human beings, members of the species man, whose continued existence is in doubt." ... "Most of us are not neutral in feelings but as human beings we have to remember that if the issues between East and West are to be decided in any manner that can give any possible satisfaction to anybody, whether Communist or Anti-Communist, whether Asian or European or American, whether white or black, then these issues

must not be decided by war...

".....We appeal as human beings to human beings: remember your humanity and forget the rest."¹

One should not have illusions that most scientists will always be able to live up to these standards. One should not even cherish illusions that there will ever be a time when all people who work in the field of science will be able to accept such an activist and cosmopolitan conception of science with all their practical consequences. Like in arts or philosophy, not all people who accept a role in life have the necessary intellectual and psychological predispositions.² Many prefer to remain passive observers of the political, intellectual and moral battles of their time. Furthermore, some choose to be open enemies of every free and critical thought they use all their knowledge and talents to justify ideological dogmas or to support official views whatever these might be and no matter how they might fluctuate.

And still, inspite of such polarizations and resistences within its own ranks, science can play an enormous role in making this world more rational and humane.

II

What is the specific role of science in reducing existing international tension?

Generally speaking, only by the use of scientific method we can reach a reliable judgement as to what is exactly the situation in which we are; what are really the causes which brought it about, consequently, which are decisive variables

1. Russell, Einstein, An Appeal for the Abolition of War, September 1955 "The Atomic Age", ed. by Grodsius and Rabinowitch, N.Y. and London, 1963.

- Russell, Has Man a Future?, Penguin Books, 1961, p.55-59

2. That's why we should not identify science with what is done by people who have a scientific degree and sit in scientific institutions. Some of those who do not satisfy formal requirements, no matter where they work, still are able to approach problems in a scientific way and vice versa.

we have to change if we wish to survive and create a more peaceful world.

It is true that sometimes only high administrative officials know many important data about given situations. However, knowing data is far less than knowing the situation. Data may be taken as instances of concepts which are inadequate, or as confirmation of assumptions which are misleading. Stalin knew the data about the concentration of the German armies in 1941, but he did not interpret them as signs of Hitler's intention to attack. Churchill and Roosevelt did not probably lack the essential military, economic and other data about USSR in that year. They feared that Germans would finish with her in a few weeks because they did not expect that Russian peasants would so defend their country - slaves usually don't do so. Without this assumption about USSR as a police-state and taking into account some history, one might have correctly predicted the behavior of the Russian people.

Making the correct picture of the nature of the present day international tension also requires some historical background - at least of the period after 1917.³

In addition it requires a conceptual apparatus which, from the point of clarity, communicability and adequacy far surpasses those stereotypes with which a politician operates, such as democracy, Communism, Wall Street, Kremlin, subversive activity, brainwashing, indoctrination, imperialism, etc. These must be replaced by the concepts and theories of economic science, sociology, political science, law, social psychology, etc...

It should be noted that so far science has not yet devoted sufficient attention to a complex, interdisciplinary study of contemporary international relations. Scientists often lack the necessary information. What is more serious they sometimes deal with the problem of war, of peace and international politics in a commonsense way, disregarding the principles of scientific method which they otherwise observe

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3. Sometimes even that does not suffice. Who does not know history of traditional Chinese philosophy (especially Confucianism and Taoism) will fail to grasp important aspects of contemporary China.

so scrupulously in their special fields. For example, there are many surveys of the history of disarmament negotiations which remain at the purely descriptive levels. Little effort has been made to analyze all factors in play and their mutual interaction, to explain the behavior of the main protagonists and to predict future steps under various conditions. To explain certain superficiality in their approach to the problems of peace research some scientists introduce the following dualism: they speak as scientists in the special field where they are highly qualified; here they speak as ordinary human beings concerned about the survival of mankind. This seems to be a mistake. These problems are very complex, sometimes more complex than those which we deal with in our special field of interest, and they demand engagement of a scientist just as a scientist, with all the advantages which his objective, systematic and critical way of thinking can provide.

III

More concretely speaking, the fields where a scientist can contribute a great deal to relax present international tension seems to be the following:

- (1) explanation of the dangers of the existing hostility among great powers under conditions of present day military technology and arms race;
- (2) the search for concrete technical solutions of the various aspects of disarmament and national security problem;
- (3) thorough interdisciplinary study of all decisive factors which influence international relations in general, disarmament negotiations in particular;
- (4) study of legal and ethical aspects of international politics, development of international law and ethical code of international relations;
- (5) organized resistance to public opinion, prejudices created by mass media and incompetent teachers, active efforts in remoulding public opinion and in reforming educational programs and methods;

- (6) active participation in various international programs of aid to developing countries in view of the fact that poverty, unsolved social problems and consequently, revolutions in these countries are one of the major causes of conflicts among great powers.

IV

Ad. 1

In the difference from all other arms in history the full meaning of the use of nuclear weapons can be determined only the experts in nuclear physics, biology, chemistry, etc. Only they know what are the blast, thermal and radio active effects of the various kinds of bombs under various conditions, only they can calculate what would be the probable average contamination of the earth's surface in the future; what would be the possible rate of increase of hereditary diseases, etc. But, they don't participate in taking decisions about the use of these weapons. On the other hand, those who are the only ones responsible for their use have to decide on the basis of how the alternatives have been presented to them. It is therefore, essential to study and inform both high political officials and broad public about all implications of a nuclear war.

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- 4. It is very instructive to study the history of the decision to throw the first two atomic bombs on Hiroshima and Nagasaki. On the basis of what Henry Stimson, the Sec. of War until September 21, 1945, records, it might be concluded that President Truman approved the use of the bomb, taking into account on the one hand, that the bomb would destroy an army center head quarters of the Japanese army defending Southern Japan (Hiroshima) and a major seaport which contained several large industrial plants of great wartime importance (Nagasaki) and while on the other hand, without the use of Atomic bombs the major fighting would not end until the latter part of "1945" and such operations might be expected to cost over a million casualties to American forces alone, while enemy casualties would be much larger than our own". It is clear that many important aspects of the situation have not even been mentioned. (Stimson, The Decision to Use the Atomic Bomb, "The Atomic Age", N.Y. London; 1963, p. 30 -44)

Of all enumerated fields this is the one in which perhaps most has been done, although in some countries, much less than is needed. However, scientists have to cope with the fact that some of their own colleagues minimize the effects of a possible nuclear war, create dangerous illusions in the public opinion and exert pressure on their own governments to give up the policy of disarmament.

One illustration of such an attitude may be found in the writings of Edward Teller, when he says for example, : "I believe that an extensive shelter program would save the great majority of the people in the United States even in case of a most ferocious attack. It is certain that such an attack would wipe out our industries, but past experiences as well as some research on the question of possible reconstruction have shown that the United States could recover from an all-out attack in a small number of years." And he goes on by asserting that eighty billion dollars "would make our passive defence satisfactory"⁵

To say the least, it is strange to listen to a scientist when he publicly expresses "beliefs" of such a kind without any argument and when he makes extrapolations about the consequences of an all-out attack on the basis of "past experiences". A good deal of effort in fighting ignorance, illusions or even wickedness in connection with nuclear war should be directed against such misleading and irrational views of some of our fellow scientists.

It should be added that, in difference from nuclear weapons, broader public opinion is less informed at the moment about the dangers of chemical and especially microbiological war. Much more must be done in this direction in the following years, especially taking into account that the problem of control of those weapons seems at present, less difficult to solve than that of conventional and nuclear weapons.

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5. Edward Teller, The Feasability of Arms Control and the Principle of Openness, Arms Control, Disarmament and National Security, ed. by D. Brennan, N.Y. 1961 p. 123.
 6. H. Marcovich, Control of Biological Weapons, paper presented at the 14th Pugwash Conference in Venice (Pugwash Newsletter, 1965, Vol. 3, No. 1 p. 17).

V

Ad. 2

By now it has become clear and generally accepted that any progress in military and political aspects of disarmament must be prepared by the solution of many small, technical problems. These can be dealt with only by experts, scientists and scientifically minded officials. It is very important that they continue to work on such technical problems in the U.N. committees, at the Pugwash conferences and national group meetings, in various institutes - even when the political situation does not promise any agreement. Experience shows that when a large amount of technical issues have been previously settled, it becomes possible to reach agreement in a relatively short period of time as soon as favorable political conditions arise. A good example is the Moscow Test Ban Treaty from 1963. Without 4 or 5 years of intensive work of various committees of experts it could not have been concluded so quickly and it is doubtful whether it would be possible later after the aggravation of the situation in Vietnam.

Continuing work on technical problems is important for another reason: it helps to establish the lines of communication and to keep them open. Very often one can witness a complete communication block. Notorious single case is Vienna meeting of Khrushchev and Kennedy in 1961. Jerome Weisner describes this phenomenon in the following way:-

"In conflict situations between individuals and in conflict situations in which individuals act for nations, statements of antagonists are evaluated not in terms of the intended meanings but rather in terms of the most threatening alternatives. This is particularly true when survival is believed to be at stake. When this happens, there can be no meaningful communication. Every proposal by either side is scanned for the hidden purpose. The entire history of the atomic control negotiations is a demonstration of this effect."

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7. Jerome B. Weisner, Comprehensive Arms Limitation Systems, 'Arms Control Disarmament and National Security', ed. by D. Brennan, N.Y. 1961, p. 199.

Nevertheless, as other observers notify,⁸ experience also shows that, in difference from political discussions before large auditoriums and the press, in which very responsible officials take part and in which an emotionally loaded, vague language is used, the problem of communication has been considerably less in the discussion of experts, which were not binding, could not count on propagandistic effects and required an operationally definable conceptual apparatus

These considerations, however, should not lead to an overemphasis on technical problems on account of political ones. We are actually confronted with two opposite tendencies. One consists in laying stress on the former and neglecting or postponing the latter. This attitude is characteristic of many U.S. negotiators. The U.S.S.R. representatives have for a long time been annoyed by such an approach. Now, they have more understanding for it, but still seem to feel that agreements in broad political terms are much more important than small technical steps.

The only reasonable position seems to be the following: One should appreciate the merits of small steps in the conditions of suspicions and fear. One will never reach a goal unless he starts moving. Moving forward even in small steps might help to restore a minimum of confidence. The problem is, first, whether a step is really a move forward, and secondly, whether one step is followed by the other. One should not be a perfectionist but one should also not be oversatisfied by very meager and slow advances which might have been calculated to divert the world's public opinion from a situation of a dangerous stalemate. One really should not forget what John Stuart Mill has once said: "Against a great evil a small remedy does not produce a small result; it produces no result at all."

VI

Ad. 3

International relations have become the subject of study of many scientific institutions and individual scientists.

8. Bernhard G. Beckhoefer, Negotiating with the Soviet Union, "Arms Control, etc.," p. 276

One may doubt, though, whether these studies always tend to penetrate into deeper levels of social reality in order to provide reasonably full explanation of political behavior in the international arena, or they mostly tend just to describe phenomena and to trace their history in a rather superficial way. (A limitation of some such institutions, is that they might be pragmatically orientated services of administration intended to provide necessary information.)

What is needed is not so much such surveys as causal analysis which is much more complex and difficult to do. The real problems are: what are the decisive social forces which produce international tensions; how they have been manifested under various conditions in various parts of the world in recent history, especially what was their order of importance in periods of growing tension and crisis in international relations; which of them can be changed by systematic human action and what are the alternative courses of action from the point of view of long term interests of all concerned countries in a nearest future, etc.

In a paper on Reduction Of International Tension presented at the Third Pugwash Conference in Kitzbühel -Vienna, Broch Chisholm has made the following list of factors which produce these tensions:-

- 1) Intense nationalism and national demand for prestige, power or economic advantage.
- 2) Competition for food, oil, raw materials, markets.
- 3) Fear of intentions or of actual attempts at domination, invasion, infiltration or "subversion."
- 4) Resentment at imagined, claimed, or real superiority, particularly of the standard of living.
- 5) Religious differences which, operating in an emotional and non rational field, can easily be exploited by demagogues.
- 6) Continuing concern about ancient or recent wrongs, kept alive for internal or external political purposes by unscrupulous politicians or by early teachers or prejudices to children.
- 7) Personal ambition, often so identified with nationalism or common interest that it cannot be separated.

- 8) Lack of concern for the welfare of the people of other nations, producing economic vassalage, capture of their markets or ruthless exploitation of their natural resources by foreigners.
- 9) Support by foreign governments of any group within nations whether such groups are defined politically, ideologically, racially, religiously, nationally or otherwise."

This list is more preliminary sketch of a project for research than a presentation of the results of a research. It lacks order, indications of interconnections and differences of level. While it contains some relevant but not very important factors have been omitted such as: fast progress of military technology, feedback action of the arms race, pressure of military and militaristic people, ideological hostility, etc.

However, this list gives an idea of how broad the theoretical context must be of any reasonably well organized research in this field and also indicates clearly that in order to be fruitful, such a research must be interdisciplinary.

VII

Without morality and law, any social community would collapse and fall apart. Therefore, if we want to have a minimum of order and harmony in international relations, very serious and long term efforts must be made to develop international law and also at least some basic principles of a universal human morality applicable to the relations among countries and nations.

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- 9) Broch Chisholm, Reductions of International Tensions, "Proceedings of the Third Pugwash Conference of Nuclear Scientists Kitzbuhel - Vienna, Sept. 14 - 21, 1958 p. 120

The fact is, that international law is still to be made. What there is, is mainly bilateral or multilateral agreements between states and very few basic principles. In addition there is an International Court of Justice to provide arbitration. Even these are not universally accepted and are challenged (by countries in which the social order has been changed or which have recently become independent) as being the expression of the interests of the ruling classes of those countries by which it was created. While this view is surely an oversimplification¹⁰ it reflects two simple facts:-

- (1) that law in general, therefore also international law, is historical category and must change in a changing world;
- (2) that any law is the expression of certain interests and if the international law should serve to a community of sovereign states as a whole, it must express common interests of all members of the community.

This leads us to the more essential problems: Are there any elements of a general humanist conception of justice? Are there any common long term interests of all states and nations? Are there any moral principles and norms which are applicable to all societies in a given epoch?

These questions are closely connected and directly related to the problem of the foundation of international law.

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10. Victor Knapp from Czechoslovakia has expressed a different opinion at the Third Pugwash Conference when he said: "Contemporary international law is based upon the principles the wording of which has been reached by peace-loving nations after centuries" and when he supported his thesis about the illegality of use of atomic weapons by a number of international legal documents from Declaration of St. Petersburg, Dec. 11, 1868 banning the use of explosive projectiles at war to Hague Rules of Air Warfare from 1923. V. Knapp, The Legal Aspects of the Dangers of the Atomic Age, Proceedings of Third Pugwash Conference of Nuclear Scientists, Kitzbühel Vienna 1958, pp. 215 - 217.

Law is that minimum of morality which is compulsory and whose observance is secured by authority. Both are necessary for the protection of common interest of the given community and establishment of a minimum of international harmony without which no community (in the sense of "Gemeinschaft") would be possible.

To all three questions the answer should be, it seems to me, in the affirmative.

Nowadays it is clearer than ever that mankind has common interests because of the common threat to its existence, because it needs peace, cooperation, development of science and technology (which has international character, independently of anybody's wishes or prohibitions), enrichment of culture by the contributions of all nations, and besides, because technological, economical and other social processes push toward integration and unification.

There are also universally accepted elements of justice and morality which have been expressed in their theoretical form in the great humanist philosophical tradition from Socrates to Marx and Russell. In practical life in various times and different historical conditions they take the form of different norms, but still can be expressed in a general way as preferences for certain types of actions, all other conditions being equal.

This is the field open to extremely interesting and important comparative historical and empirical (sociological, anthropological, socio-psychological) research. In our time this field is almost virgin land. Not only that very little is being done, but the very possibility, or at least the importance, of such research has been doubted by some scientists, even some engaged in the Pugwash Movement.

Here I see a clear case of inconsistency. Some scientists who take part in the peace Movement hold that many problems of disarmament, security and peacekeeping can be solved only within the framework of various super-national organizations-regional federations and confederations, etc. Some speak about the world's government as something which could be reached in one generation and some even express the view that everybody who rejects world's government is only paying lip services to disarmament.

Obviously, if there are no common interests and common elements in the conception of justice and moral principles there is no ground on which mutual relations in any envisaged future international community can be based; furthermore, this implies a state of affairs described by Hobbes: bellum omnium contra omnes.

If there are any common interests and values - they should be studied, and the best strategy seems to be analysing those events in recent world history where the world's public opinion reacted in an almost unanimous way. In more complex cases, differences in historical condition, character of prevailing tradition, etc. would have to be taken into account

Apart from such fundamental studies it is necessary that scientists from various countries who work in the field of international law undertake similar collective studies and discussions to those of their colleagues from the field of nuclear sciences. The latter were able to solve many technical problems when they approach them as scientists. It is much more difficult for experts speaking in the name of governments and often overburdened with various political considerations to reach agreement, especially in contemporary ideological climate. According to Prof. Arangio Ruiz experts who worked on the preparation of a declaration on international relations in Geneva 1964 - 66 were not able to agree even in such principles as that "All states are equal and sovereign"; that, "No" country should intervene in internal affairs of other nations, that cooperation on economic, social and cultural fields should be developed, etc. Let us hope that the specialists in international law would be able to solve much more complex problems at scientific conferences. The business of science is just that: to solve the problems and help to implement solutions in the best possible way and the best possible interest of people - not primarily to serve one ruling political elite or the other. Here I have already embarked upon the following point.

Ad. 5

VIII

There are moments and cases when scientists have to prove that together with writers, artists, philosophers, leading journalists, etc., they constitute the conscience of mankind, moments when they have to do what was done by Oppenheimer in the U.S.A., Russell in Great Britain, and in a recent letter of leading Soviet scientists to their government on the eve of a possible reappraisal of some aspects of Stalin's policy.

Scientists surely belong to their nations and are therefore patriots. But, just for that reason, among others, they know that they must actively oppose to all those actions and

conceptions, no matter who might back them, which, in the long run, harm the interests of their people.

An important aspect of this problem is active struggle against all those dualistic clichés about other social systems and chauvinistic expressions of self-satisfaction and of hostility toward other nations, which are day to day pouring from mass media and poisoning the unprotected minds of both young and old. Science has something to say about such dangerous prejudices - it is essential that an as powerful as possible reaction of science should take place in those same mass media at the radio, television, newspapers with the largest circulation.

While this kind of action aims at therapeutic effects, there is a vast field in which science can reasonably expect to pay an essential prophylactic role. That is the field of education. Many scientists are also pedagogues - they teach those who will in turn teach thousands of young people. It is essential for a society in order to remain sane and healthy that its teachers will be educated to be objective, humanistic and critical toward all unwarranted and biased ideas.

Ad. 6

IX

Education is a field in which considerable aid should be secured to developing countries. That is why one of the groups on the 15th Pugwash Conference on Science and World Affairs in Adis Abebe dealt with this problem. Their considerations are listed in the first place, in the final statement issued by the Continuing Committee. Among them, I should especially like to mention the following one: "A very important objective of the educational system of a developing country is to inculcate a questioning critical and experimental attitude is essential for the generation of new ideas, vital for the solution of all the novel problems facing a developing country. In view of their responsibility, the training of teachers should be very carefully planned to foster the spirit of vigorous independent enquiry."

This is but only one among many other problems of developing nations where the aid of scientists from developed countries is needed, such as organization of scientific institu

11. Pugwash Newsletter, Oct. 1965 and Jan. 1966 Vol. 3 Nos. 2 and 3; p. 27

tions and research training of technologists necessary for industrialization, active help to solve the urgent problems facing the nation in the sphere of development, etc.

Apart from all these concrete forms of aid, one of the immensely important tasks of science is to help the governments of developed countries, especially those of great powers to realize the true nature and urgency of the general problem of developing countries.

The misery of many of these countries is a progressive misery. According to the report of ECOSOC for 1965 the gap between the living standard of developing and developed countries tends to broaden both absolutely and relatively. On the other hand, there is a grave danger of an increase of the gap between the growing population and the production of food, in the next ten to fifteen years.

For a social scientist, this clearly indicates a high probability of great social explosions in the immediate future. Policies of great powers being as they are, this would inevitably lead to a series of dangerous international conflicts comparable to the one in Vietnam. This can be avoided only by the very considerable capital investments and other forms of economic and technical assistance.

However, we are confronted with a vicious circle. While great power's budgets are so heavily burdened by military expenditures, means for assistance are too limited. So, problems remain and lead to new tension: which need further increases in military budgets. It is strange that even the continuing committee of the Pugwash Movement might have overlooked this. In the statement from Adis Abeba Conference we can read the following passage:

"Economic assistance of developed countries to the developing ones, however, important, taken alone can have only a marginal effect. Even if relaxation of international tension would release additional resources for this assistance, the rate of economic growth in developing countries will remain largely dependent upon their own determination and effort."

It seems to me that the things are exactly the other way around. Resources for assistance should not be the consequence of relaxation of international tension but one of the essential factors leading to it.

Otherwise, if developing countries are being left to

their own efforts, then it can be proved that the Chinese way is the only alternative for most of them. But how many more wars similar to the one in Vietnam, would we have in case of such development?

So it seems to me, there is a real common interest on both sides to avoid such trends in developing countries which might lead to an international crisis, and the only way to make peaceful developments and social transformations possible, is to assist developing countries, technologically, economically, culturally - which boils down to help them solve the problem of the primitive accumulation of capital. It is increasingly clear that many countries under present conditions just cannot solve it. The rate of growth of productivity is smaller than the rate of population growth (which according to Harrison Brown is 3.7% in Costa Rica, 2.9% in Mexico, 2.8% in Ceylon and Puerto Rico etc. - in comparison to the world's average rate of 1.6% in the interval 1950 - 1956 and only 0.7% in the period 1850 - 1900)¹² According to some experts (for example, Woods, the president of the International Bank for Development) if these trends will continue, the living standard in many backward countries will not substantially increase even before the end of this century.

One of the most important contributions of scientists to the reduction of international tensions would be to show all urgency of such problems, to help to find the most rational peaceful solution to advise their governments (and even exert pressure if necessary) to bring these solutions to life.

12. Harrison Brown, A World Without War, Daedalus Fall 1960; p. 1034.

I

The Problem of War and Peace

Prof. B.V. Røling

The problem of war is really a very big problem. War is the means by which a highly developed culture may perish. Of course it is possible that our world breaks down through its technical development. One way this might happen is war.

There were quite a number of wars in the past. The historian Lea calculated that in 3400 years of recorded history there were 234 years without war. One can understand the opinion prevailing through the ages: war is inevitable. This opinion found expression in the "war-cycle": "war - poverty - humility - peace - wealth - pride - war". An example from 1696 runs as follows:

"War begets poverty, poverty peace,
Then people will traffic, and riches increase,
Riches produceth Pride, Pride is War's ground,
War begets Poverty, So we go round."

The modern expression of the war-cycle may be found in Lewis Richardson's "Statistics of Deadly Quarrels" and "Arms and Insecurity". He tries to measure the blind forces working towards war, and to predict what would happen if people "did not stop, to think". He elaborated on the "Richardson-process", with the attendant states-of-mind, again a war-cycle, now in the 20th Century expressed in mathematical terms.

There have been many wars in the past. That we are living and are living in a prosperous society, is not the consequence of the wisdom of our fathers, but of their ignorance about the technique of destruction and killing.

There have been many wars, but they have been different in kind: wars of conquest, wars of liberation, religious and ideological wars, wars as "the sport of kings", and "wars as the game of gentlemen".

It is important for us to realize the character of our present wars, as they are greatly influenced by democracy and industry. During the last centuries we observed a development from limited war to total war, and back. Three aspects are of specific significance:

1. the participating soldiers: from mercenary armies, via professional armies to citizen armies. We might call this the active democratization of war.

2. the development from "armed men" to "manned arms": the growing significance of arm and arms-industry. The destruction of the war industry and of the people working in the war industry becomes an acknowledged military aim. Thus almost the whole civilian population is a military target. We might call this the passive democratization of war, leading to the mass-bombing of cities.
3. The revolutions in weapon technique: with regard to destructive power, range and velocity. The growth in destructive power is apparent if one com pares the blockbuster of World War II of about 10 to 12 tons of TNT with the Hiroshima A-bomb of about 20,000 tons of TNT, and the Nova Zembla H-bomb of 57 million tons of TNT. In 1940 the city of Rotterdam was destroyed by 94,5 tons of TNT. The effect of one Nova Zembla H-bomb exploded 90 km in the air above Holland, would be that almost all of Holland would be burned. Missiles can reach targets at the other side of the globe, in a time-span measured in minutes.

In the meantime an unrestricted search for new and better, more effective weapons is going on. This search fits in our general pattern of culture, dominated by values of effectivity and utility. This has not always been so. The great mathematician Napier made a weapon when the Spanish Armada was approaching England - which could destr~~oy~~ all life within a circle of three miles. But when the danger was over, he did not publish his invention and took the secret with him to his grave: considering man's nature, he thought it better that states should not have such means at their disposal.

In former times cultures had specific aspects incompatible with the unlimited use of weapons: the sense of manly honor and "chevalerie", the sense of beauty and the sense of morality. Sometimes economic considerations played a role. It all worked in favor of a restriction of inventions, and a restriction in the use of arms.

Not so in our times, in which technique is paramount. We are accustomed to exploit technical innovations, to use everything we have. In so doing we are - according to Weizsacker - behaving like children, or as young monkeys.

But such is the situation, and there we are with

arms able to destroy our civilization. States, as the US or the USSR, never have been so powerful. They both are able to totally destroy the opponent. But both can, and no defence of the population is possible. There was never so great a capacity to destroy the other, there was never so little capacity to protect the population in time of war.

The American professors Weisner and York, experts in this field, concluded: "Both sides in the arms race are thus confronted by the dilemma of steadily increasing military power and steadily decreasing national security. It is our professional judgement that this dilemma has no technical solution".

The question is whether this situation guarantees peace. In military and governmental circles the prevailing opinion is: this "balance of horror" prevents war. I would like to stress this fact. It is, in my opinion, the biggest mistake of our time. It may be the most fatal error.

The theory of the effectivity of the balance of horror is the modern version of the old "wisdom": "si vis pacem para bellum". History with its thousands of wars shows the consequences of this "wisdom", but it came up again. The question - a cardinal question - is whether the old adage contains truth now that the states are in the possession of totally destructive weapons.

One consequence cannot be denied: the function of thermonuclear arms is limited. In former times, the function of arms was not only to threaten with war, but also to win the war if peace could not be maintained. At present, at least between parties who both have thermonuclear weapons, the only function is to prevent war.

Thermonuclear arms cannot be the means to measure power in a contest, but only the means for preventing that the other party dares to go to war. Quite correctly, in this view, the motto of the American Strategic Air Command is: "Peace is our profession".

But with this, the cardinal question: "Do nuclear weapons prevent war?", is not answered. The issue is not so simple as it seems to be.

No doubt, the H weapons exclude the possibility (between reasonable governments!) to decide in cold blood to start a total war against another H-Power. The American Secretary of Defence, McNamara stated that in such a total war between the US and the USSR 149 million American casualties could not be prevented. No danger - as long as governments act reasonably - for a premeditated total thermonuclear war between the biggest powers.

But - first observation - is there any guarantee that governments will always qualify as reasonable governments? Recently 22 million Americans voted for Goldwater! And there any guarantee that reasonable governments will always act reasonably, even in times of exceptional emotion and stress?

Second observation: limited wars are feasible between thermonuclear powers. One may formulate as a thesis: that the more thermonuclear war will be excluded, the more limited wars will become a possibility.

The French general Beaufre has drawn the line of unfriendly relations, going from bad to worse: cold war - limited war - total war. Cold war may lead to limited war, limited war to total war. Herman Kahn has recently given a more sophisticated escalation ladder of 47 steps. The transition from one phase to the other is a gradual one. In former times a sharp distinction between peace and war existed: "Inter bellum et pacem nihil est medium" (Cicero, Grotius). In our time, the relativity of war and peace is emphasized. It is dangerous to conduct a provocative Cold War policy, because it may lead to limited war. The limited war is dangerous, for it may lead to total war by the process of escalation. Hence, according to Beaufre, the need for a "total strategy". But the tendency of conducting a reckless foreign policy, including limited war, will grow if the danger of escalation towards an all out thermonuclear war is excluded by measures of "arms control" and other safeguards.

The "philosophy of military strength" includes the conviction that escalation may be prevented by having superior power on every level of weaponry. Robert N. Ginsburgh's "US Military Strategy in the Sixties" (New York 1965) is based on the concept that superior strength prevents war. The

H-weapons will prevent an H-war, and case of limited war escalation will be prevented by the possession of superior weapons. "Our possession of the option of employing superior force at all levels of intensity should be sufficient to deter. If it does not deter, it allows us to win at a lower level of intensity without giving an opponent any incentive for escalation to a higher level at which he would also face our superiority".

Ginsburgh states that this⁽¹⁾ is the philosophy behind McNamara's strategic concepts. It is a peace theory based on power. It is also a theory based on rational calculation, it is a theory based on the rationality of war and the conduct in war.

The question is whether a peace theory based on the rationality of war is trustworthy. Man is also an irrational being driven by emotions, swayed by what he considers the values of life: love and loyalty, courage and justice. Most nations could describe the view they take in international affairs as "with firmness in the right, as God gives us to see the right."

One of the irrational elements is the influence of power on men. The American Senator, Fulbright, spoke of the arrogance of power. Power seduces to conducting a risky, provocative external policy, because it gives the confidence that the other countries will not dare to react, out of fear for the superior force.

This leads to a third observation: thermonuclear weapons may prevent the premeditated thermonuclear war between thermonuclear powers, but they promote the occurrence of premeditated limited wars.

One might say that the Soviet Russian action in Hungary and the American and the American action in Cuba and Vietnam would not have been undertaken if they had not been convinced that the opponent would not go to war for

(1) According to John L. Sutton (Survival 1966, p. 65-66) he does correctly so.

fear of a total thermonuclear war. But error in judgement in those cases is not excluded. A nation may be mistaken in its belief that the question is not a vital issue for the opponent. Miscalculation is one factors which may lead to escalation of the fighting.

But we have to go a bit deeper into the problem of war and peace. The best guide in this complicated problem is the greatest novel ever written about war: Tolstoi's "War and Peace", the story of Napoleon's war against Russia. Napoleon's war? Nonsense, Tolstoi argues, great men are the puppets of history, they may give their name to a period or a war. But wars are the results of the uncountable blind forces working within societies. Great men are not the causes but the consequences of history. They are the "marionettes de l'histoire". So it was, according to Tolstoi, with Napoleon, product of the forces of the revolution which created and destroyed him.

Tolstoi ridicules in his "War and Peace" the German generals, who, in the service of the tsar, played a considerable role in the Russian army. General Pfuhl elaborated the strategic plans. His firm conviction was that war could be manipulated; that it was an instrument in the hands of men of destiny. War, Pfuhl maintained, should be conducted rationally, according to well-elaborated plans and concepts.

General Pfuhl is perhaps only known today through Tolstoi's book. But his aide-de-camp Carl von Clausewitz, who plays a minor role in Tolstoi's story, elaborated on the philosophy of his boss in a world famous book "Vom Kriege" (On War). In this classic of military science, von Clausewitz defined war as "the continuation of policy with other means". His concept of war prevailed up to our times: war is not a catastrophe stemming from the blind forces working in society, but war is a policy, a premeditated affair, begun when state-aims cannot be achieved peacefully.

One may learn from Tolstoi's and Clausewitz' books that two concepts of war exist. In modern theory one

speaks of the strategic model and the cataclysmic model⁽²⁾
war as a policy and war as a catastrophe, a cataclysm.

The most popular today is Clausewitz' concept. On it were based the books in which the authors advocated future wars for their country, for instance, General van Bernhardt: "Germany and the next war" (1911) and Tota Ishimaru: "Japan must fight Britain" (1936). Anti-war books were also based on this concept as is the case with Norman Angell's "The Great Illusion" (1910), in which he elaborated on the thesis that war does not pay. The philosophy of Norman Angell, that people and governments will not go any longer to war, if they only realize that war does not pay, rests on the concept of the Clausewitz war. Based on Clausewitz' concept was the Pact of Paris (1928) which outlawed "war as a means of national policy".

The opinion that every war is a war in the sense of von Clausewitz, that every war is a premeditated "continuation of policy with military means" is a fatal error. The unintentional, accidental, cataclysmic war does exist: war as an accident, as a traffic accident in a dangerous international traffic. One may read Hermann Kahn's "On Thermonuclear War" about the various ways in which war may occur, notwithstanding the fact that nobody wants war. As the main reasons one should mention: accident, error, miscalculation, misinterpretation and escalation.

The fatal error that all wars are intentional, premeditated wars, leads to other misconceptions:

1. the trust in the efficacy of the prohibition of war. As a matter of fact the unintentional war can start in such a way that no party can be accused of having violated art. 2 sub 4 of the UN Charter. For instance, if one state re

(2) Compare Anatol Rapoport: Two Views on Conflict: The Cataclysmic and the Strategic Models, in "Proceedings of the IPRA Inaugural Conference", van Gorcum, Assen (Neth.) 1966, p. 78 - 99.

acts in good faith, for reasons of security against measures taken, in good faith, for reasons of security, by the other state.

2. the trust in the "balance of power" or the "balance of horror". It is the prevailing opinion nowadays that the nuclear and thermo nuclear weapons have made war impossible, that the A- and the H-weapons are the guarantees of peace. This opinion is based on the consideration that reasonable nuclear powers will never take the decision "to fight it out".

With regard to the opinion that nuclear powers never will take the decision to start a total, nuclear war, the answer is: among reasonable nuclear powers the thermonuclear weapons will prevent premeditated thermonuclear war. But they do not exclude the cataclysmic thermonuclear war which just happens through escalation - out of, let us say, the war in Vietnam, or through miscalculation - as might have happened in the Cuban crisis, in which President Kennedy at a crucial moment observed: "it can go now either way".

The policy of deterrence, peace through strength, through the balance of horror and the continued arms race, is not a policy guaranteeing the prevention of war. Such a policy of peace through strength inevitably leads to proliferation of atomic weapons, and generally to very dangerous and explosive international relations. The choice for peace would include not only the prohibition and exclusion of intentional war, but also the prohibition and exclusion of a dangerous international traffic in which war as a traffic accident is likely to occur.

Such a choice for peace would imply a fundamental change in position and function of a national state, in the character of international relations, in the position and function of the international organization called upon to maintain the peace. The present set-up is formulated in present international law. Consequently a peace-order would need a fundamental change in international law". The slogan "peace through law" is only valid in the present time in the formulation "peace through peaceful change of the law".

Some aspects of a legal peace order, which not only intentional war is excluded, but also dangerous international relations are eliminated, might be mentioned.

1. At present the sovereign states have the right of unrestricted national armaments. This fundamental right leads to the arms race, and makes proliferation of nuclear weapons in the long run inevitable. Abolition of this fundamental right is necessary. We need arms control, arms limitation, and at the end, disarmament. It will be a long process but a beginning should be made. The statement of the late President Kennedy is more valid than ever: "We should abolish the arms before they abolish us".
2. The realization of a system of peaceful co-existence is needed. Some authors, as Raymond Aron, maintain that we are already living under such a system. I wonder what the Vietnamese would think of it. One might say: co-existence, existence in diversity, is a fact. But we are still far away from peaceful co-existence. Peaceful co-existence is not a fact, but a norm of behavior. Many changes in present international relations and present international law are needed before the world is "safe for diversity".
3. An international system in which peaceful change is possible, is needed. Up till now arms played a considerable role, preventing undesirable change and bringing about desirable change. War had a function, and might still have a function in some parts of the world. But total wars with modern weapons have become unbearable, and limited wars bring the danger of escalation. The interdependence in the world of today makes every war or civil war a matter of concern to the rest of the world.

How to provide for the possibility of change without force? Where there is life there is change. Every change

touches upon vested interests, and will be resented by the party which position is touched upon. People are willing to accept change after defeat. But without a power contest, without defeat?

It is an extremely difficult problem. There is no world legislator, nor a world judge. However, one way proved its worth in the decolonization process; the way of collective diplomacy, collective pressure and collective conciliation. Decolonization was achieved in the framework of the UN, not withstanding the fact that the UN Charter recognized the colonial system. The Charter provided for good colonial administration, not for the abolishment of the colonial system. Still in two decades decolonization in the political sense, was achieved. One might speak of "decolonization by resolution". This technique of gradual change might be fruitful in other fields.

4. the prevention of unbearable tensions is needed. There will always be conflicts, life presupposes conflicts. But it will be necessary to prevent that conflicts become so tense that force is used for their solution. Consequently action, included legal action is needed with regard to the causes of conflict to eliminate the factors which make conflicts explosive. I would like to mention in this connection the poverty in the world, the population explosion the race discrimination. Nationalism and ideology also play a role here.
5. The strengthening of international cooperation and organization is needed. The change in the function and position of the sovereign state will be reflected in the change in the function and position of regional and world-wide organizations. Everyone realizes that it has become impossible for the sovereign state to fulfill its former functions, that is to provide for security and well-being. When the smaller unit becomes incapable of fulfilling a function, the bigger unit should be called upon to take over.

E.g. the UN will have to play a role in connection with disarmament, testban, denuclearized zones, etc.

But this transition is a very difficult and complicated process. Here, more than anywhere else, it turns out that man is for a large part irrational. Emotional, deep-laying attitudes stand in the way of rational solutions. One has to recognize that. Rational "blueprints for world reconstruction" are useless. We have to find the gradual way which can be followed by men as they really are.

6. Needed, in view of all this, is scholarly research. It will be impossible to get somewhere on the basis of conventional wisdom. In politics, conventional wisdom is in high regard. It is wisdom based on former, factual experience. It is invaluable in static periods, where the factual situation is the same. It is insufficient, and it may even be disastrous, in dynamic periods in which fundamental factual changes occurred. Our time was witness to two great events: the liberation of the colonial peoples and the liberation of atomic energy. By these events new forces were freed, and another world order is needed to prevent that the world will succumb through these new forces. To bring about this new world order, research is necessary, peace research.

I mentioned some fields in which present international law is not adequate to the present factual situation. I would like to go a bit deeper into some topics in my next lectures: first of all into the question of the law of peaceful co-existence.

II

Peaceful Co-existence

Prof. B.V.A. Roling

In our first lecture we came to the conclusion that peaceful co-existence was one of the necessities of the time, of our nuclear age. It is a necessity, in view of the technical development of the weapons, and of the present international set-up, -- that is, the world divided in sovereign states which decide for themselves their interests and their values. Sovereign states which have an unlimited right of national armaments; sovereign states which are accustomed to defend these interests and these values through their armed forces; sovereign states which compete with each other in force, that is the arms-race. -- This present international set-up does not guarantee peace. And nuclear war has become unbearable.

There is something wrong in this situation. Sociologists have a word for it. They speak of the "cultural lag" between the facts and opinions and customs. The facts change quicker than do the minds. A growing, widening gap exists between technics and ethics.

The American Professor, Kenneth Boulding drew attention to the fact that, notwithstanding the large amount of money spent in the US for the armed forces, the official civil defence literature has as its starting point, that security can only be found in deeply dug underground shelters. He states:

"When after spending 500 billion dollars on defence in ten years, the armed forces of the US have to turn around and say to the civilian population: 'dig your own holes, boys', it is obvious that something has gone radically wrong"

One reaction to the present arms-situation is to adopt an elaborate system of civil defence; going underground. We arrive then at the shelter-centered society, in

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1. Kenneth Boulding: The University, Society and Arms Control, in J. David Singer (Ed.): Weapons Management in World Politics, Ann Arbor 1963, pp. 458-463.

which mankind has become the slave of arms, and in which the military have the last word.

The other reaction is to change the present international set-up, and to arrive at new ways of co-existence. One aspect of such a new set-up would be disarmament. It is now three-quarter of a century ago that a woman, Bertha van Suttner, wrote her prophetic book: "Die Waffen nieder". After almost 75 years this slogan has become the officially acknowledged policy of many states. General and complete disarmament has been unanimously recognized at the UN as "the most important problem facing the world today".

One might say that to arrive at peaceful co-existence disarmament is a condition. A system of peaceful co-existence cannot exist for long if the unrestricted national right to armaments is maintained. But I will not speak today about disarmament, but about peaceful co-existence.

The concept of co-existence of states is not new. In 1927 the Permanent Court of International Justice decided the Lotus Case. It discussed the function of international law with respect to sovereign states, and it maintained that this function of international law was:

"to regulate the relations between these co-existing independent communities with a view to the achievement of common aims".

A year later, in 1928, Max Huber, as arbiter in the Las Palmas Case, saw as the object of international law:

"The necessity to attain the coexistence of different interests".

Perhaps the oldest reference to coexistence may be found in the letter which the French king, Francis I, wrote in 1535 to Pope Paul III in connection with the pact concluded by the king with Sultan Soliman. He wrote:

"The errors of men and their imperfections prevent them from uniting in one religion, but neither the diversity of religion, nor the difference of customs destroys the natural associations of mankind".

That brings us to the question: What is co-existence?

"Co-existence" is something else than 'existence'.

The word co-existence implies existence in diversity. It means: collectivities which differ in socio-economic systems, and which live together on one earth. As such, co-existence is before anything else a fact, although some tolerance between the different systems is a precondition of such factual coexistence.

Peaceful coexistence has more the features of a normative concept it means living together peacefully in diversity, it means an international set-up which is, to use the words of the late President Kennedy, "safe for diversity", which might be a guarantee of peace diversity.

Before going into the questions: "What kind of system is the system of peaceful co-existence?" I would like to indicate first the preconditions of any system of peaceful co-existence.

We discuss at this moment the peaceful co-existence between socialist states and capitalist states.

Preconditions of the replacement of the Cold War by a serious system of Peaceful Co-existence are:

1. The recognition that the opponent's socio-economic system is viable for an indefinite time. As long as the West thought that the Soviet theory taught the near downfall of the capitalist system, a doctrine of P.C. was less easily arrived at. Necessary condition for acceptance, on both sides, of a system of P.C. is the recognition that we shall have to live together in diversity for an indefinite time.
2. The recognition that the two socio-economic systems can exist side by side. In the past, both sides used to proclaim that the victory and universality of their own system were necessary for survival of that system. That opinion has been disproved by the experience of half a century. The capitalist world is less afraid of communism since the disap-

pearance of the colonial system and since capitalist states became, more or less, welfare states (that is states striving for full employment and for a decent living standard for all). It seems to me that especially in Western Europe the fear of communism has disappeared. That is less the case in the US where free enterprise capitalism, liberal capitalism is maintained, and where a race problem exists. The communist world is less afraid since it has become well established and powerful, and a return to capitalism has become unthinkable.

3. The recognition that the other party is not preparing for a military attack upon the other. Both parties have lived in great fear of one another. Since the well established "balance of horror" this fear no longer exists. Both parties recognize that total nuclear war would mean destruction for both.

In summary: we may take it that some preconditions of peaceful co-existence are fulfilled. The way to peaceful co-existence is open.

The question then is: What does Peaceful Coexistence mean? What is its contents? The concept of peaceful Coexistence originated in the USSR. The Revolution had brought about a cleavage in the old international set-up. A new order had been established in the USSR.

No ordinary relations between the socialist and capitalist camp seemed possible. Still some relations had to develop.

In 1920 the USSR participated in a postwar trade conference. This participation has been called by Foreign Minister Chicherin "the first experiment in peaceful co-existence".

The Party Program in 1922 reserved perhaps the qualification of peaceful coexistence for the mutual relations between socialist states, that is the states forming the USSR. It was recognized at the time that peaceful coexistence with capitalist states could only be a question of tactics, could only be a passing relationship.

Later it was recognized that peaceful coexistence should be the quasi-permanent relation with the capitalist world.

A kind of revival of the concept of peaceful co-existence was closely connected with the change in the opinion about war.

There was a time in which the general opinion in the Soviet Bloc was "war is inevitable, for the capitalists will start it".

During the fifties the opinion that peace could be maintained gained strength and general recognition, on the basis of the recognition that in a total war between the communists and the capitalists, both parties would destroy each other.

As I see it a great development with regard to the principle of peaceful co-existence took place at the 21th Party Congress in 1959 and the 22nd Party Congress in 1961:

Peaceful coexistence was recognized as 'a general principle of foreign policy' (p. 112) on the basis of the recognition that "war cannot and must not serve as a means of settling international disputes". At the 22nd Party Congress Peaceful Co-existence was described as follows:

"Peaceful coexistence implies renunciation of war as a means of settling international disputes and their solution by negotiations; equality, mutual understanding and trust between countries; consideration for each other's interests; non interference in internal affairs; recognition of the rights of every people to solve all the problems of their country by themselves; strict respect for the sovereignty and territorial integrity of all countries; promotion of economic and cultural cooperation on the basis of complete equality and mutual benefit".

It was recognized at the same time that peaceful coexistence did not mean the end of the ideological competition:

"Peaceful coexistence serves as a basis for the peaceful competition between socialism and capitalism on an international scale and constitutes a specific form of class struggle between them" (p. 64).

At the 23rd Party Congress in 1966 a resolution was adopted in which it was stated that the foreign policy of the USSR aimed at:

"upholding consistently the principles of the peaceful coexistence of states with different social systems".

What are those principles? Peaceful coexistence is described in the Report of the Central Committee of the C.P.S.U., delivered on March 29, 1966:

I quote: "this means that while regarding the coexistence of states with different social systems as a form of the class struggle between socialism and capitalism the soviet Union consistently advocates normal, peaceful relations with capitalist countries and a settlement of controversial interstate issues by negotiations, not by war.

The Soviet Union firmly stands for non interference in the internal affairs of other countries, for respect of their sovereign rights and the inviolability of their territories".

The 23rd Congress approved in "full and completely the political line and practical activity of the Central Committee of the C.P.S.U. and the proposals and conclusions contained in the Report of the Central Committee of the C.P.S.U." (p. 279).

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3. The 23rd Congress of the C.P.S.U., 1966, Novosti Press Agency, p. 50.

But in the adopted resolution Peaceful coexistence is not described in particular as in the Report (P. 288), and more stress is laid on support to people fighting against colonial oppression and neo-colonialism (p. 282) and on reinforcement of the defence potential of the USSR (p. 289). This may be caused by Vietnam, which has deteriorated the relations between the USSR and the US.

The recognition of peaceful coexistence is also apparent in the definition of International Law as formulated by the Academy of Sciences in the USSR: It reads: International Law is "the aggregate of rules governing relations between states in the process of their conflict and co-operation, designed to safeguard their peaceful co-existence, expressing the will of the ruling classes of these states and defended in case of need by coercion applied by States individually and collectively".

It is the old definition of Vishinsky from 1948, but the words "designed to safeguard their peaceful coexistence" are added.

I would like to elaborate a bit on the concept of peaceful coexistence. It is, in my opinion, of crucial importance.

In the UN it was proposed in 1961 to place on the agenda: "Consideration of Principles of International Law relating to Peaceful Coexistence of States". During the deliberations the topic was changed into: "Consideration of Principles of International Law relating to Friendly Relations and Cooperation among States in Accordance with the Charter of the UN". Special committees were entrusted with the task of formulating these principles. Up till now the result is disappointing.

The Special Committee, of 27 members, meeting in Mexico, 1964, has discussed four principles:

1. prohibition of the use of force;
2. peaceful solution of conflicts;
3. non-intervention;
4. sovereign equality of states.

The Special Committee of 31 members, meeting in New York in 1966, discussed, next to these four principles, also:

5. duty to cooperation in accordance with the Charter;
6. equal rights and self - determination of peoples;
7. good faith in the fulfillment of obligations.

In Mexico, some consensus was reached with regard to 'sovereign equality'. In New York this was affirmed, and some consensus reached with regard to "peaceful resolution of conflicts" (but this consensus does not add much to what is formulated already in the Charter).

About the other five principles no consensus was reached. It seems to me that this discussion was based on a rather narrow concept of peaceful coexistence.

One might say, the same of the Report to the 23rd Party Congress. This report refers to "normal, peaceful" relations with capitalist states. If we take "normal relations" in the sense of relations as they usually exist, I doubt whether peaceful coexistence in this sense is something that would guarantee survival in our nuclear world. The normal peaceful relations in former times always, after some time, exploded into wars.

In the discussions about the principles of peaceful coexistence emphasis is given to independence and non-intervention. If all states would mind their own business and abstain of meddling in the affairs of other states, we would have, apparently, a peaceful world.

I, personally, doubt this. States are out for security and are used to feel only secure on the basis of power. They are not prepared to base their security on that trust that other states will behave decently. Neither the US nor the USSR is willing to do that.

The study of international relation reveals that the "normal" relations of states do not guarantee peace.

The normal system is: the world divided in sovereign states which decide independently upon their interests and their values; which develop strong national armaments to defend these interests and these values against other sovereign states which have independently determined their interests and their values.

The situation in which interests and values are sufficiently protected, we call security. My thesis is that even in case sovereign states are striving only for security (and not for conquest), there will be an arms-race, and time to time war.

Peaceful co-existence as discussed in the Special Committee and as described in the Party Program would be a

step in the right direction but would not be sufficient in our nuclear age.

International Law, adequate to meet the requirements of this nuclear age - one might call it the natural law of the nuclear age: the necessary law, the law that is needed - goes beyond the description of peaceful coexistence up till now formulated.

Such an international law would not only entail the prohibition of war, but also the limitation, regulation or even prohibition of national armaments, and the acceptance of collective security.

It would entail the principle of peaceful settlement of disputes, elaborated in effective ways and means to arrive at conflict resolutions. It would recognize the principle of peaceful change and peaceful conservation. It would entail the principle of non-interference of one state in the internal affairs of another, and an elaboration of the principle of good neighborliness in the relation of states.

It would entail the recognition of fundamental human rights and the principle of non-discrimination, and recognize the principle of collective guarantees of these human rights.

It would include the recognition of the UN, not only as an organization for peace and security, but also as a welfare community, based on the principle of decent economic and social conditions of all its members. At present this would entail the principle of protection of the economically weak against the economically strong, and of the principle of collective assistance to attain a condition of reasonable economic growth.

It would include the principle of cooperation to arrive at reasonable world welfare conditions.

Such a set of principles would more or less amount to what one may call "the natural law of the atomic age"⁴

4. McDougall speaks of the "international law of human dignity".

or active peaceful coexistence.

Such a set of principles refers to a far away future. It indicates the legal system that once, in a far future, should be valid if peace is to be maintained.

Its significance in our time is:

1. to be the yardstick which may be used to measure the intrinsic value of smaller steps. This yardstick enables us to judge whether such a small step is a step in the right direction.
2. to remind us that we still are in the transition period: between the law of the "civilized nations" which was a law of war, and the law of the "peace-loving nations" which aims at a law of peace.

The present world discussion about peaceful co-existence is a discussion about first steps - some of them going in the right direction, some of them of more dubious value, because they stress perhaps too much the concept of national sovereignty, and give too little attention to the role of the UN.

I think here:

1. of the concept of peaceful coexistence as developed in the USSR Party Programs,
2. of the concept of peaceful coexistence as developed in the writings of USSR scholars,
3. of the concept of peaceful coexistence as discussed in the UN special committees.

There was also extensive discussion of peaceful coexistence in the International Law Association. At its session in Dubrovnik, 1956, a Yugoslav proposal put the issue on the agenda, and the discussion is going on up till now.

Here also the name has been changed, following the example in the UN. This change was partly due to the consideration that peaceful coexistence was regarded

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5. This distinction has been elaborated in my "International law in an Expanded world", Amsterdam, 1960.

by many people as a communist proposal, if not a communist slogan. They would rather have a less politically loaded name.

But at the same time others preferred another name because they considered peaceful coexistence as proposed in the USSR as too negative, because they wanted the concept of active peaceful coexistence, which would include cooperation and international organization.

My suggestion is that both approaches should be pursued.

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6. Compare Edward McWhinney "Peaceful Co-existence and Soviet - Western International Law", Leyden, 1964; p. 34. McWhinney gives a set of practical rules amounting to "small steps", p. 93-99.

III

PEACEFUL CO-EXISTENCE

The Question of Non-intervention

Non-intervention is a very broad subject. It has to do with the behavior of states in times of peace and in times of internal war.

A first observation about it might be: it is very difficult to draw a clear line between ordinary relations among states and undue, undesirable and prohibited interference.

States have relations, political, cultural and economic relations. They try to make friends. They try also, to demonstrate the fine qualities of their own "way of life", their own "socio-economic system". They make propaganda for it, and they are perfectly entitled to do this. Furthermore, rich and poor states have special relations. The developing nations expect foreign aid and assistance, and most of the highly developed states are willing to give foreign aid, grants, loans. States often have very intense relations. And it is sometimes very difficult to decide where these relations become interventionary relations. The issue is complicated in case not only foreign state plays officially a role but also some body closely related with it, acting on its own responsibility.

The USSR has relations with foreign countries, but also the Communist Party of the USSR has relations with other communist parties.

The US has relations with foreign countries, but the CIA, but also the Central Intelligence Agency also has relations with foreign governments or the opposition in foreign countries. Such relations are mostly secret relations activities are in the most cases officially denied, but later recognized, sometimes with pride. The overthrow of the legitimate government of Guatamala was organized by the CIA, and later referred to with pride by President Eisenhower, although he had denied any American interference at the time.

The question is:

At what moment are those relations becoming prohibited interventions? This is a very difficult and delicate problem.

National sovereignty means independence, the freedom of the natural state to arrange its external and internal af

fairs according to its own choice (within the framework of international law). It amounts to freedom with regard to:

1. the internal organization of its social, political and legal system.
2. the external relations with other states, including the conclusion of treaties.
3. the participation in international organization

Foreign intervention begins there where a foreign state takes measures which violate this freedom of choice.

Are all actions which restrict this freedom, or which have influence on this freedom, or which are taken to restrict this freedom "forbidden intervention"?

Is it forbidden intervention if a state refuses to give foreign aid in case "christianity" or the "communist party" is outlawed in a country? The same applies to trade relations or diplomatic relations. The state is free to conclude treaties, and that freedom includes the refusal to do so, if it does not dislike specific actions of the other states.

The concept of intervention, that is the exclusion of the free choice in another country is determined by several factors:

1. the freedom of the one state to do or not to do certain things, as buying the products of another state
as giving foreign aid (as long as according to international law - giving foreign aid is not regarded as a duty).
2. the freedom of the other state to regulate its own affairs.

Here a clash of freedom exists. It is the usual position where the law is going to play a role, in determining where the freedom of the one is restricted by the freedom of the other.

Where does this line run? I would like to make two observations in this respect:

Obs. I - It may be helpful to see the prohibition of intervention as one of the principles of peaceful co-existence, which aims at maintenance of the peace.

Our guiding consideration may be: some actions of a state against another state will not be tolerated by a third state, and will be counter acted by specific measures.

Obs. II - taken as a starting point that peaceful co-existence aims at the maintainance of peace in a divided world, the line between "normal relations" and prohibited intervention" will partly be determined by the relations between the super powers in these blocs.

I will restrict my observations on intervention to interference in connection with civil strife and internal war:-

Civil war, internal war, revolution, has in our present time great significance for international relations. I may mention several reasons for this:

1. the doctrine of Marxism-Lenism that the world will become a communist world by way of internal uprisings of the proletariat, thus by the revolution.
2. the recognition that the outcome of a revolution may be decisive for the question to which "bloc" the country will belong in the future.
3. the expectation that in the young, developing nations, change in the social systems is bound to occur. They want to modernize, but most of the times have no provisions in their social system to do this constitutionally. An American expert wrote: "The susceptibility of the uncommitted nations to internal war is,..... likely to increase rather than decrease as dynamic social changes accompany their efforts to modernize"

Another expert wrote: "Without a constitutional tradition of peaceful change some form of violence is virtually inevitable"².

Traditional international law is based on the principle of legitimacy. The government may request military assistance against armed minorities or majorities, and foreign countries are entitled to give that assistance. It is

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1. James N. Rosenau: Internal War as an International Event, in Rosenau (ed.): International Aspects of Civil Strife, Princeton 1964 p. 45-91, p. 88.
 2. Samuel P Huntington: Patterns of Violence in World Politics in Huntington (ed.) Changing Patterns of Military Politics, New York 1962, p.45.

the same with assistance in time of peace: economic assistance to governments is admissible and legal, assistance to the "opposition" is labelled "subversion". In the same way military assistance to the government is admissible and legal, assistance to "the rebels" is frowned upon.

I talk here about traditional international law. More and more voices, also in Western countries, are raised that the rebels sometimes are more entitled to foreign assistance than the feudal, corrupt regime they want to eliminate. Take, for instance, the case of the negroes in South Africa or Rhodesia. In many Latin American countries a social revolution is badly needed.

Still, we have to recognize as a fact that in our world there are two super-powers; the US and the USSR.

The US stands for the maintenance of the old order. We need not discuss that here as to its merits. Sufficient for our purpose is to recognize the existence of a super-power, who wants to prevent that other, up till now, uncommitted states turn communist and join the Soviet Bloc.

On the other hand, there is the other super-power, the USSR, who officially proclaims that it stands for a new order, that it will support revolution. I quote from the Resolution of the 23rd Party Congress.

"The new way of life in countries that have thrown off the colonial yoke is taking shape in ferocious clashes with the treacherous imperialist enemy and reactionary domestic forces which depend on imperialism for support in their efforts to guide the young states along the capitalist path".

The Congress instructs the CPSU to continue to support the peoples fighting against colonial oppression and neo colonialism; to develop all-around cooperation with the consolidation of the anti-imperialist front of the peoples of all countries, and to extend its contacts with the communist and revolutionary-democratic parties of the young national states" (p. 283).

For the outsider who would neither associate himself with the American point of view, nor share the standpoint in the USSR, the picture is a bit disturbing; there are two giants, the super-powers, accusing each other of imperialism, mistrusting each other, and both out on promoting their way of life and giving support to sympathetic elites and both confronted in that way in many countries, especially in places where an internal war is deciding the future external policy of a state. On both sides, the analysis of

an American author is applicable:

"If empire once depended primarily upon the extent of colonial occupation, it now increasingly depends upon the capacity to³ influence the outcome of important internal wars"

In this connection it is worthwhile to quote another American author who stated "We intervene about as often⁴ in the internal affairs of other nations as the USSR....."

Recently, the 18th of May 1966, the American Minister of Defence, McNamara delivered in Montreal a remarkable speech, in which he discussed the problem of poverty in the developing countries. McNamara observed, that in the last eight years, there 149 "major internal upheavals", "internationally significant outbreaks of violence". Only one occurred in a rich nation. However "Since 1958, 87% of the very poor nations and 48% of the middle income nations have suffered serious violence". McNamara notes that there is an "an irrefutable relationship between violence and economic backwardness". "And the trend of such violence is up, not down", because the gap between the rich and the poor nations is widening.

His conclusion is: "given the certain connection between economic stagnation and the incidence of violence, the years that lie ahead for the nations in the southern half of the globe are pregnant with violence". Hence, his elaborate plan for quicker development. But he draws the attention to the fact that violence, internal strife, in this southern part of the world concerns the security of the United States. He mentions in this connection, what he calls the "subversive activities" of the USSR, but he

3. Richard A. Falk, Janus Tormented: The International Law of Internal War, in James Rosenau, op. cit. 'p.185 - 248, p. 186.
4. Manfred Halpern: Morality and Politics in Intervention, in Rosenau op.cit. p. 249 - 288, p. 263.

states expressly that also without this subversive activity violence would occur. In the 149 "serious internal insurgencies" only in 51 cases, communists were actively involved, according to McNamara. But he concludes: "Whether Communists are involved or not, violence anywhere in a taut world transmits sharp signals through the complex ganglia of international relations; and the security of the U.S. is related to the security and stability of nations half a globe away".

As I said already, McNamara stressed the link between poverty and internal unrest. Hence, his proposal to assist in a quicker development. But one may ask: "Would a quicker development prevent civil strife?" I suggest that it does not.

Social and economic development clashes with existing traditions and religious opinions and attitudes.

Moreover the development will always be uneven and slower than expected. Johan Galting⁵ has developed a structural theory of aggression from which it follows that the period of development is a very dangerous one, full of frustration and aggression: in short a period in which civil strife will occur more often than in the period of static poverty.

Consequently we have to expect in the near future many cases of civil strife, even in case foreign aid is multiplied and quick development is achieved.

Here clearly we face the dilemma:

In the USSR we have the official doctrine of giving assistance to every social revolution.

In the US the doctrine is being developed to help every government against social revolution. It started there with the Truman Doctrine, in 1947, in which the US declared to be prepared to give

5. Johan Galting: "A Structural Theory of Aggression", (Journal of Peace Research, 1964, II, p. 95 - 119) which is a theory taking the social context sufficiently into consideration (p. 96).

to governments assistance against "armed minorities or outside pressure".

Recently an American international lawyer, Wolfgang Friedmann, formulated American foreign policy as claiming the right:

- "1. to determine whether an internal revolution involves a degree of participation by Communists regarded as dangerous by the U.S.,
2. to intervene by force in order to prevent such a possible outcome in the civil war".

It means a preparedness to commit intervention in the conviction that constant intervention by the USSR is practised, according to its doctrine of assisting social revolutions.

It is clear that this situation is filled with danger. For, assistance to governments and assistance to rebels, that is: the internationalization of the internal conflict, might easily escalate into a nuclear war.

Both parties are inclined to deny that they are guilty of intervention. But they react upon the activity of the other. And it is not clear on both sides as to how far the opposing party intends or is willing to go. This is dangerous. I may quote again an American author, Fred Warner Neal:

"Given the propensity of the Soviet Union to support - in whatever way - the revolutionary movements and the tendency in the U.S. to oppose them, a lack of clarification on these points could easily lead to ill-considered - and possibly fatal - military confrontation between the two nuclear giants. Such classification must be considered, therefore, essential for meaningful co-existence"⁶

It would be a common interest to have more clarification of intention on both sides, because both parties are

6. Fred Warner Neal: Co-existence: Practical Problems and Politics, in Co-existence, A Journal for the Comparative Study of Economics, Sociology and Politics in a Changing World, Vol III No. 1, 1966; p. 7 - 18 p. 13.

agreed that a nuclear war between them should be avoided. If that is the case they have a common interest not only in avoiding the premeditated nuclear war, but also the nuclear war which might come, against the wishes of both parties, by gradual escalation of an internationalized internal war.

Vietnam is a case in point. And, in view of the many internal uprisings to be expected in the developing countries, Vietnam would not be the last, but only the beginning of a series of limited wars fought by proxy, gradually deteriorating the international climate up to the unwanted climax of World War III. It is a grim prospect. Sheer selfinterest, taking into account the above mentioned factual tendencies on the one hand, and on the other hand the common interest in avoiding nuclear war, would indicate the desirability of some kind of understanding on this point.

A provision about the prohibition of intervention, as adopted in the UN resolution is clearly not enough. It does not prevent assistance given at the request of a government, neither does it prevent assistance given to "the rebels" in a social revolution. More specific rules of conduct are needed. The question is whether any chance exists that both parties would agree upon more specific rules "unless the U.S. limits its tendency to play the role of global anti-communist gendarme and unless the Soviet Union limits its role on the opposite side".

The Vietnam war, however, has played havoc here as elsewhere. It is undoubtedly true - as it is said in the Report of the Central Committee to the 23rd Party Congress, p. 45 - that through this Vietnam war the relations between the USSR and the US have deteriorated. On the other hand, the experience in the Vietnam issue may be of great significance: the experience that it is not easy to impose your will on a people. Vietnam proved again what France experienced in Indochina and in Algeria: it is

almost impossible in the present time, notwithstanding the modern weapons, to dominate a people which as a people is opposed to that domination. In former times it was much easier. France conquered Algeria in the 19th Century with 30,000 men. It was not able to maintain its dominant position with 500,000 men in the 20th Century, because the people as such had changed. The people became involved. Algeria was conquered in the 19th Century because at that time the population was not involved: a small elite with a small army was defeated, while the population did not participate. The emancipation of the masses changed all this.

But if this is a general feature of the modern world, states, even super powers will gradually recognize that they should be careful. I, for one, am quite convinced that the US would not have begun the Vietnam adventure if they had realized to what it would develop and escalate. And the end of it is not yet in view.

There is "a lesson" in the Vietnam issue which might be decisive in the future, restraining intervention if there is any guarantee that the restraint will be reciprocal.

Would there be any chance to arrive at a clarification of the rules concerning non-intervention?

It might be helpful to make a kind of distinction with regard to "rules". One may think of a set of rules specifying the prohibition of intervention, and as such drawing the line between legitimate "relations" and prohibited interference, formulated in the framework of the U.N. This would amount to rules given to the parties by an authority representing the world.

One may also think of practical rules, derived from factual experience in the encounter at the occasion of an internal war in a third state, rules which formulate what the opponent is expected to do in reaction upon activity of the other. Rules have all kinds of functions. One of them certainly is to indicate which activity of the one party will bring the other party to reaction with all the means at his disposal. Rules have

what is called a tripwire-nature, as is the case with frontiers. They draw lines which, if overstepped, make specific reaction probable. One might call these rules "rules of political expectancy". They indicate not what ought to happen, but what will happen, in re-action.

It might be possible to formulate some rules which indicate at what occasion certainly a specific kind of reaction of the opponent might be expected. If it is the common interest of both parties to prevent such kind of reactions, it may be possible to come to an agreement about the validity of such rules.

But to arrive at this kind of understanding will not be easy, although it is worth trying. It is only one small aspect in the overall issue, which amounts to this: if ever disarmament would be realized (and that is the crucial point of really peaceful existence), it will be necessary to have clarification about the tolerance and self restraint states are willing to practice, instead of the all-out crusading spirit which now prevails. On this point specific rules will be needed indicating what states are expecting the other state to do or not to do; rules or principles of conduct in the competition with regard to the Third World.

Peaceful co-existence needs this self restraint and clear rules of 'fair competition' which exclude what the one party would condemn as intervention and the other would brand as intolerable subversive activity.

In short, what is needed, is a compromise in a very vital matter. But one might say that it is a vital issue to arrive at such a compromise - a vital issue but a difficult task; because it is the nature of the compromise to compromise men or states advocating it.

IV

PEACEFUL CO-EXISTENCE
POVERTY AND PEACE

Prof. B.V.A. Roling

In a previous lecture I stated that one of the features of a system of active peaceful coexistence would be the taking away of the causes of conflict, that is the elimination of those circumstances which are bound to lead to violent conflict.

We mentioned the poverty problem, racial discrimination, overpopulation, nationalism. I would like to discuss today the problem of the relation between poverty and peace.

In our world there are two dominating problems of the old, rich, nations; they have so many arms. The problem of hunger is the problem of the young, poor nations: they have so few goods.

Before going into the question whether a relation exists between the two main evils, I would like to say a word or two about the problem of poverty and about the problem of war.

These two problems must be seen in the perspective of the present world situation. We live in a divided world, a world, as it were partitioned, on the basis of contrasts and tensions:

1. the contrast of the rich and the poor, the "haves" and the "have not's",
2. the contrast of ideologies: the cold war contrast of free enterprise system versus the communist system,
3. the contrast between arms-conscious nations, who are prepared to enter into international understanding about arms, as: test ban agreement, anti-proliferation treaty, and in the long run General and Complete Disarmament, and nations who still cling to national independence and grandeur and who want to continue the world system prevailing in the 19th Century, and which led to World War I and World War II.

This is the contrast between arms-internationalists or "peace-loving nations" and the national arms'-loving,

nationalist nations as China, which prefers the dangerous and risky international system of the arms race and the "balance of horror".

4. the contrast of white and non white nations. This is an age-long distinction made by the whites, who discriminated on the basis of race, up till the Charter of the U.N. Still the League of Nations refused to adopt the equality of the races. Equality is now recognized in the Charter of the U.N. Except for a few countries the white world is quite prepared to accept equality. But now the discriminating distinction is made by some non-white peoples, for instance, China uses this argument to keep the Soviet Union from Afro-Asian conferences; they said at the Moshi Conference: "Whites have nothing to do here".

One observation: it is a criss-cross picture when we look at the four contrasts. Generally speaking the white nations are the rich nations (but Japan!), but for the rest everything is mixed up: in the world of the socialist states: USSR is rich, China is poor; USSR is white, China non-white; USSR is "arms conscious," China is notoriously not.

Let us return to our theme of war and poverty.

Poverty: in the young countries there is a very strong desire to get rid of hunger and poverty, in the young countries the "revolution of the rising expectations" took place. The poor nations want prosperity, but many social forces prevent them from doing the things needed for prosperity: religious, ethical or social attitudes and opinions oppose the new style of life necessary for economic advancement. The force of tradition stands in the way of doing what is necessary.

War: in the old nations there is a very strong desire, a longing for peace and security. There is the growing recognition that enduring peace cannot be based on an arms race, on a balance of horror, and the growing recognition that the old rich nations need general disarmament to prevent war (Kennedy: "We

have to abolish the arms, before they abolish us"). But many social forces prevent them from doing the things needed for peace: religious, ethical or social attitudes and opinions oppose the new style of life necessary for peaceful coexistence. The force of tradition stands in the way of doing what is necessary.

With regard to the war problem and the poverty problems there is a similar difficulty: traditional attitudes and opinions oppose the changes which are necessary to achieve the non-traditional, progressive, new aims: universal peace and universal prosperity.

The traditional outlook is an obstacle in our dynamic period, in which two enormous factual changes took place: the liberation of the colonial peoples and the liberation of atomic energy. By both events forces were released which may destroy our world, if our world refuses to adapt itself to the new situation. Here is the main problem: the mind of men goes slowly, every generation seems only to have little room for change, especially it is difficult to change without being compelled by force. The usual way of adaptation is the way of blood and tears, the way "the Lord teaches the law to Kings". The task for our and the next generation is to bring about the necessary change without the experience of a nuclear war and without the experience of a world rebellion of the poor against the wealthy.

Now we come to the question whether a relation exists between war and poverty. There are many relations between the war - and arms - problem and the hunger - and poverty problem. I will mention some of them:

1. At present about 180 billion dollars are spent yearly on arms. The spending of this amount of money for arms prevents the use for more constructive purposes as the fight against poverty.

It is easily understood that poor people resent this. In the UN-history of the discussions about development plans, many times it occurred that money for "aid and development" was refused with the explanation: it will only be possible after disarmament.

There is an element in arms-spending which prevents spending for foreign aid. Clearest in Resolution VIII 724, Dec. 7 1953, in which we find a Declaration about the relation between arms-race and development aid:

"We, the Governments of the States-members of the U.N., in order to promote higher standards of living and conditions of economic and social progress and development, stand ready to ask our peoples, when sufficient progress has been made in internationally supervised world-wide disarmament, to devote a portion of the savings achieved through such disarmament to an International Fund, within the framework of the UN, to assist development and reconstruction in under-developed countries".

This argument still runs in our present time¹. In 1964 UNCTAD adopted in its Final Act, 15 General Principles.

General Principle XII reads:-

"All countries recognize that a significant portion of resources released in successive stages as a result of the conclusion of an agreement on general and complete disarmament under effective international control should be allocated to

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1. Many UN Resolutions express the thought that resources, released by disarmament should be used in the fight against poverty.

Resolutions of the General Assembly:

Res. 1710 XVI, 19 December 1961 (on UN Development Decade)

Res. 1837 XVII, 18 December 1962

Res. 1931 XVIII, 11 December 1963

Res. 2092 XX, 20 December 1965 (on conversion to peaceful needs of the resources released by disarmament).

Resolutions of the ECOSOC:

982 XXXVI, 2 August 1963 (on the economic and social consequences of disarmament, concerning inter alia the advantage which disarmament could have on the economic and social programs throughout the world)

1087 XXXIX, 30 July 1965.

the promotion of economic development in developing countries".

This is the first clear relation between the war-problem and the poverty-problem: the arms race prevents the rich nations from spending sufficient means in the fight against poverty.

2. A second relation is of quite a different nature. The fact cannot be denied that foreign aid is often given for political reasons, that foreign aid is used as a tool in the Cold War competition.

Foreign aid is in many cases determined by political and military motives: foreign aid is often given to win political friends; foreign aid has become a cold-war instrument.

By the way, the Cold War had some disastrous influences: it stimulated the arms-race, and was itself stimulated by the arms-race. But the Cold War had also some favorable side-effects:

- a. The Cold War promoted the process of decolonization. The Cold War is called the last great split in the white people. This last split within the white population made it possible to end white political domination.
- b. The Cold War also promoted foreign aid:
 - with respect to the US: from "Marshall aid" to "Alliance for Progress" the handling of foreign aid was determined to a high degree by the wish to prevent the spreading of communism;
 - with regard to the USSR: just after World War II the Soviet Union was itself badly in need of help. But after some years it also used foreign aid as a means of international influence.

Sometimes it looks like a "combat de générosité", and there are states which are very skillful in handling the two competing firms.

The effect of foreign aid given with political purposes to win, to buy friendship, is not very promising.

Foreign aid has not been very successful in making and winning friends. The experience in the Western, as in the Soviet world has been that the friendship gained is often inversely proportional to the assistance given. It is called a mysterious law, by which aid works in the opposite direction. "It is now a truism that for complicated set of reasons the giver of aid often makes more enemies than friends in the process." Perhaps this is the reason that it is less and less given. The American Aid Program in 1965 was the lowest since 1948³. The same trend can be observed in Soviet aid.

I suggest that it was wrong to base foreign aid programs solely on Cold War motives.

The present opinion is that foreign aid should not be given as a tool in the Cold War competition. It does not work in this respect. A more solid motive for aid is of quite another kind; it amounts to this: things will go wrong in the end, if the poor nations are becoming poorer and the rich nations are becoming richer. And this is what happens today: the gap between poor and rich is widening.

This essential fact I would like to stress. I quote from "United Nations Development Decade at Midpoint", an Appraisal by the Secretary-General UN, ECOSOC, June 11, 1965, p. 3 - 4:

"The gap between the per capita incomes of the developing countries has also widened during the 1960's; between 1960 and 1962 the average annual per capita income in the developed market economies increased by almost 100 dollars

2. Joseph S. Berliner: Soviet Economic Aid, London 1960, p. 60.
3. See Susan Strange: A New Look at Trade and Aid; in International Affairs (London), 1966, p. 61 - 73.

while that in the developing countries increased by barely 5 dollars".

"Two-thirds of the world's population living in less developed regions of the world still share less than one-sixth of the world's income. In 1962 annual per capita income in these regions averaged 136 dollars, while that of the population of the economically advanced market economies in North America and Western Europe averaged 2845 dollars and 1033 dollars, respectively".

Something must be done. Foreign aid and the fight against poverty should not be based on Cold War motives, but on the clear recognition that if the gap continues to widen, if the poor are becoming poorer and poorer, and the rich richer and richer:-

1. many revolutions and civil wars will occur in the poor countries,
2. a world-explosion cannot be avoided in the long run.

AD 1. I would like to draw the attention to the speech by McNamara, in which he stressed the deep relation between poverty and revolution. If the gap between rich and poor continues to be a widening gap, we may expect many social uprisings with left wing tendencies. McNamara declared: "the security of the U.S. is related to the security and stability of nations half a globe away".

The USSR Party Program 1966 stresses the need to assist social revolutions.

We may conclude: continuing poverty, with many uprisings in the future will lead to many hostile confrontations of the two super-powers, and such confrontations may lead to World War III.

We also conclude: what prospects has the issue of general disarmament if it is to be expected that everywhere violent uprisings will occur, and if it is recognized that the outcome of these internal wars will have a decisive influence on the balance of power between the Cold War opponents?

AD 2. Another aspect of the widening of the gap is the possibility of the world revolution of the poor against the rich.

If the process of the widening gap continues, one may expect at the end an enormous struggle between the poor and the rich, a world -revolution, which will mean a world war, in which nuclear and thermonuclear weapons are used.

In this respect it is important for us to understand the prevailing mood in the young nations:

- they have become aware of their poverty;
- they do not see this poverty any longer as a fate ordained by the Gods, but as a situation brought about by colonization and the prevailing market-mechanism⁴.
- there has been the revolution of the rising expectation;
- there is a growing resentment against the rich nations and their spending of 180 billion dollars yearly on arms;
- there is a growing conviction that the poor have a right to a better kind of life;
- there is a growing conviction that the rich have the legal duty to cooperate in bringing this about.

The question then is: do the rich nations do the things necessary for world prosperity? Statistics show that the rich are getting richer and the poor are becoming poorer. Foreign aid has some effect, but not

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4. About this market mechanism, see "Towards a New Trade Policy for Development", Report by the Secretary-General of the U.N. Conference on Trade and Development, E.-Conf. 46-3, 12 Feb. 1964, p. 21: "Between 1950 and 1961 the terms of trade of primary commodities fell by 26 % (excluding petroleum) in relation to those of manufactures, mainly owing to the rise in the prices of the latter". From 1950-1961 the fall of purchasing power due to this deterioration in the terms of trade has been estimated on 13.1 billion dollars, that is approximately half of the benefit of the inflow of all types of finance.

sufficient to bring about a turn in this process. Too little is done.

George D. Woods, President⁵ of the World Bank, has analyzed recently the situation: the gap widens. Woods gives some reasons why the aid has so little effect. Foreign aid is not sufficiently given, and often not wisely. One can speak now of a "debt explosion": the underdeveloped countries as a whole must now devote more than a tenth of their foreign exchange earnings to debt service, and the figure is still rising" (p. 211)

I quote again the president of the World Bank:

"Indeed, when all amortization, interest and dividend payments are taken into account, the backflow of some 6 billion dollars from the developing countries offsets about half the gross capital inflow which these countries receive".

In 15 years, if we continue in the same way, this payment "would offset the inflow completely. In short to go on doing what the capital-exporting countries are now doing will, in the not too long run, amount to doing nothing at all" (p. 212).

What is the main reason that "foreign aid" does not work, at least "does not work enough", that it can not prevent the widening of the gap? Is it only the question that too little is given? Or is aid in itself not sufficient?

One can make the comparison with the poverty in European countries in the 19th Century, for instance in the Netherlands: there was great poverty in the Netherlands in the 19th Century. Something was done, there was some charity, there were poor-laws and there was some poor relief. But it did not work.

Success came only after the existing system had

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5. George D. Woods: The Development Decade in the Balance, in Foreign Affairs 1966, p.206 - 215.

been altered, for it was the existing system which kept the poor poor and the rich rich.

What was this system that needed change? The then prevailing liberalism in economics, the liberal capitalism.

The state was at that time the "Nachtwachtstaat", the "Night watch state", that is the state which had as its principal aim the maintenance of order: it left "economics" to the economic laws.

The then prevailing system of political and legal liberty thus gave free play to the economic laws of supply and demand, that is to the blind forces of self interest dominating economics.

Economic laws favor the strong and the rich. They have the tendency of polarization making the rich richer, and the poor poorer.

On this point Karl Marx was quite correct: this liberal system was leading to exploitation of the labor class, was leading to "Verelendung", and ultimately to revolution.

But in the Netherlands and other European countries a change in this system of unlimited liberty was brought about through labor law and welfare law, that is through juridical laws aiming at the restriction and mitigation of the effect of economic laws; minimum wages, maximum working hours, social provisions for housing, medical help, insurance, pensions. The former unrestricted economic liberty was replaced by a new order, introducing as legal principles: protection of the weak against the strong; and assistance by the community to the members in the community in need of it .

This was a new order, we may call it social capitalism, in which the "have-not" obtained a protected position as member of a welfare-community, as member of the welfare state. The national state became a welfare state, which cares for its members, strives for full employment, and for a decent living standard for all.

Let us come back now to the international scene, to the "nations prolétaire", the "have-not" nations: it

would be incorrect to say that they are living now in the period of the poor-laws and charity. But some comparison is possible.

We still support internationally an economic system of liberalism, in which the agents, the sovereign states, act on the basis of their national interest, in which a blind market mechanism decides prices and income. It is a market mechanism originated and developed in the old, industrialized and wealthy world.

It is a system which serves the interests of the wealthy, industrialized nations, a system which makes the rich richer, and the poor poorer.

Keeping this system, we try to help the poor nations with a bit of foreign aid, amounting for the OECD nations to 0,6% of their gross national product.

This help is not sufficient and does not work in the framework of a market mechanism which works in opposite direction, through the deterioration of the "terms of trade" and the prevention of industrialization.

On the national level it did not work to maintain the system of the market mechanism and to help with charity and philanthropy. The same way of doing does not work on the international level.

What is needed is: reform of the system. The poor nations should no longer be the play-thing of the market mechanism and of the economic forces. Blind economic forces favor the strong and they widen the gap between the rich and the poor.

What we need internationally is the same as the have-not's needed on the national scene: a new order of relations in which the poor are protected, and in which they are sufficiently and systematically assisted.

In the world this new order means: the international community as a welfare community, which cares for the well being of its members; which strives for full employment of the available forces; for a decent living standard for all; and which, to achieve its aims, is active in the economic field where it is necessary to moderate and limit by legal provisions the free play of the economic laws.

Reform would imply:

- rules with regard to the price and production of primary goods:-
 - a) - assistance in the case of a sudden diminution in income,
 - b) - commodity-price regulation to assure a regular reasonable income;
- rules guaranteeing the possibility of industrialization of the poor countries:
 - 1) - procuring of capital and know how.
 - 2) - giving protection against competition from old industries.

Industrialization is very difficult in a young nation. As Woods put it (207): "Technology is costlier, capital requirements are greater, established producers are harder to overtake in world commercial competition".

- 3) - opening the possibility of export.
Needed are rules which open up the rich nations for the industry of the poor nations, for instance by way of preferential tariffs.

This means substantial reforms, this means substantial sacrifices, going so far probably as interfering with the usual national economic growth in the rich countries.

These reforms are simply necessary to prevent the world-revolution which is inevitable if the gap between rich and poor is widening.

These reforms therefore are clearly in our long-term interests because in our nuclear age a world-revolution might find its center in a nuclear power: China.

In such a World War III the technically highly developed cultures would be destroyed.

Such economic reform, to bridge the gap between poor and rich nations, is in our own vital interest in peace. It is our own interest, our long term interest, which coincides with the short term interest of the poor nations.

It is our long term interest, because there is only the choice which Raul Prebisch formulated as: "either re-

SYLOS LABINI: Some Economic Aspects of Disarmament 1

Thursday, 16/6/66 11:30

I will consider very briefly five points:

- I. Economic and human resources devoted to armaments in the world today.
- II. The two different economic problems of disarmament, i.e., the problem of conversion and the problem of maintaining effective demand.
- III. The danger of a major depression in the American Economy as a consequence of disarmament.
- IV. The problem of switching expenditure towards helping the underdeveloped countries.
- V. Some reflections on the differences between the American and the Russian point of view on disarmament and on the perspectives that we can conceive now.

I

The order of magnitude of economic and human resources devoted to armaments is rather well known. In a report prepared by a group of eastern and western experts for the United Nations and published in 1962, the total expenditure devoted to armament in the world was estimated to something like 150 billion dollars. Today, in 1966, that is probably 170 billion dollars. Only in the United States the figure was 50 billion dollars in 1962 and now is around 60 billion dollars. These figures may sound impressive, but do not mean very much unless we make comparisons. In the United Nations report it is stated that such figures amount to something like three-fourths of the total national income of all underdeveloped countries. It is equal more or less to the total value of all the world exports and, to make an Italian comparison, it is something between three and four times the Italian national income. The people engaged in armament activities are twenty million, if we consider only soldiers and civilian workers employed directly in armament activities; the figure becomes something like fifty million altogether, if we include also workers and people indirectly engaged in armament activities. Fifty million people is equal to the total Italian population. We may complete this picture by mentioning the percentage of

military expenditures over the national product in certain countries. The national product is the total flow of goods and services produced in a given country during a year. This percentage is about 8% in the United States, something like 7% in the United Kingdom; in France and in Western Germany it is of the same order of magnitude; in Italy it is something like 3.4%. If we subtract from the total income the amount of income which can be assumed to go toward the basic needs, the percentages are somewhat different - In the United States the figure becomes a little bit higher (11-12%) whereas it goes up more markedly for the other countries. I mentioned (from 3.4-7 to 8-9.5%); for not only the total amount of income but also the ~~per~~ capita income is less in these countries.

The first reaction for a person who has not been concerned with economic problems is: If we were able to devote the same figures to peaceful purposes and civilian needs, then everybody will be much richer, everybody will be much happier and the world will be a much better place to live in. The first observation we have to make is that we cannot conceive a shift of these figures without considering the big economic problems which are involved in this shift. And these problems, as we will see, are very serious. If the armament expenditure is reduced, the expansion of other productive activities cannot be considered as an automatic process. If this expansion is not simultaneous and is large enough, a reduction of in armament expenditures will bring about a multiplied reduction of income, because all the workers engaged in producing, for instance aircraft, will demand less consumers goods and would create a sort of chain reaction ending in depression, unless something is done to avoid this danger.

II

There are two types of problems which have to be clearly distinguished, although in practice they are strictly interconnected. The first problem is that if a disarmament is decided it is necessary to carry out a structural conversion of productive activities. People who are engaged in producing aircraft or ammunition of various kinds have to be shifted to other activities, and this obviously involves

a serious program of changing the kind of capital goods and of requalifying the workers to make them ready to do a new kind of job. But there is also another problem, that is, to avoid a reduction in total effective demand. This problem, which is conceptually different from the problem of conversion, in practice is interconnected with the first one, in the sense that if the effective demand, i.e., the demand which is actually relevant to the market, remains stable, then the job of transforming activities from military to civilian purposes becomes much easier, whereas if this is not done the problem of conversion becomes much more serious.

In this connection, we will have to make a distinction between the capitalist and socialist countries. In socialist countries, in the present stage of development the productivity per worker is considerably less, on the whole, than in the United States and in most of the western European countries. There are also several troubles in planning, especially as far as agriculture is concerned. But from the special point of view of disarmament, they have an advantage. Whereas the problem of the conversion in the economies is practically the same problem that we find in capitalist countries, the problem of maintaining effective demand is not so serious as in capitalist countries. We might even say that this is not a special problem; it is only one aspect of the conversion problem. This, because in the capitalist economies we have a market mechanism which is to a considerable extent a spontaneous mechanism. The risk of the spiral which I mentioned before is the result of the spontaneous mechanism; the reduction of certain expenditure, in certain lines, can bring within itself, as a consequence, a reduction in demand for consumers' goods, that is, also in goods of an entirely different character as compared to military goods. In a centrally planned economy, however low the efficiency, this problem doesn't exist. The planners have to make rational decisions at the center, of course not all decisions are rational and wastes, even serious wastes, do take place; but we do not find the problem which is typical of market economies. In other words from this particular point of view in the socialist countries the economic consequences of disarmament are

much less serious than in capitalist countries. The problem is especially serious in the U. S. The relative importance of military expenditure in the United States after the war is enormous. Now the problem is there because the United States is, let's say, the conductor of the capitalist orchestra. If this conductor makes important mistakes the whole capitalist orchestra goes down. We might comfortably say that, should the American economy have stagnated, Western European economies would not have grown as fast as they have; and they have grown even faster than the American economy. To test this proposition one might look at what were the consequences of the relatively mild recessions that took place in America after the war, especially in 1948-49, and in 1958. These mild recessions in particular the 1958 recession, were rather strongly felt by Western economies. In other words, the development of the American economy is fundamental for the development of the other capitalist countries. In a way this means that a recession or a depression, that is, a more serious blow to all Western European economies: that is not just an American concern, but also our concern.

III

1. At present, in the United States the military expenditure amounts to sixty billion dollars. Suppose that this expenditure would gradually be reduced to thirty billion dollars; this is what I mean by serious disarmament. What would be the consequence?

There are three views or three schools of thought, let's say. The optimistic view according to which disarmament is possible without a depression and the conversion problem is easy. The pessimistic view according to which disarmament inevitably would bring about a major depression. The third view is somewhere between the two, or let's say, not just one half but seventy percent between the two points of view, nearer to the pessimistic than to the optimistic one. I belong to this third school of thought. Rather than the risk of a major depression, however, I see the risk of a tendency towards economic stagnation, as a consequence of the reduction in military expenditure. Such an outcome

would be less spectacular but not less serious than that of a major depression, for three reasons.

a) the increase in productivity, due to technological progress, goes on both in periods of increasing and stationary or even falling national product. If the national product does not increase, or if it increases at a lower rate than productivity per worker, employment goes down and unemployment rises. This means rising social tensions and political troubles.

b) A stagnation in the American economy would involve a stagnation or a serious fall in the rate of growth of the other capitalist economies.

c) In the race between the United States and the Soviet Union, which depends primarily on the rate of economic growth of the two countries, the United States would become the losing horse.

It is interesting to observe that the Russians after the war were decisively belonging to the pessimistic school of thought. They said: if the disarmament is carried out, if a sharp reduction in military expenditures is carried out, that will be a disaster for capitalist economies. They cannot stand that, because capitalism can go on developing and can mask its deep structural problems only by means of military expenditure which sterilizes a part of productive capacity and therefore, at least for a time, offsets the tendency to underconsumption already discussed by Marx. This was the point of view of the Russian economists as well as politicians. The paradoxical thing is that with Khrushchev and after him the Russians jumped without qualification from the pessimistic to the optimistic school of thought. It was a big jump, from black and white. They came to accept, in a "naive way", the optimistic point of view, saying that if disarmament is carried out there will be a lot of good things which can be produced for the people in the world, both in the developed and underdeveloped countries. Everybody will be richer and of course, every problem can be solved by measures like tax reduction and so forth. With tax reduction, people would have more purchasing power and would buy more civilian goods and they will be much more happier than before. This point of view is still pre-

vailing in Russia, not quite as naive as before, but more or less in the Russian circles it is accepted.

The third school of thought has many adherents among economists; but there are differences in the type of analysis and in the degree of pessimism or optimism in the conclusions. This thesis says that disarmament is possible without causing a major depression in the United States and without, determining a tendency towards stagnation, but the difficulties are serious.

2) Before I go on discussing this view, one might well ponder for a minute why disarmament is such an important economic problem, whereas it seems that it was not such a problem in the last century, for instance. The first answer to such a question is that only in our times armaments have reached such a big size. Of course this is true; in the past century, there is nothing comparable to the size of the military expenditures of the present time, not only in absolute terms, but even in relative terms. But there is also something more and here I can only give a hint to this, because it implies a rather painstaking and detailed economic analysis, and I am not supposed to make a theoretical lecture here. So I will only give you a hint on a question which is important, because it is something which conditions a lot of economic reactions, not only in the field of armament. If we consider the American or the English economy one century ago we can see many deep differences. First of all, quantitative differences; national income much lower not only in absolute size but also per capita. There are many more differences; two are worth special attention. First, agriculture was still the most important activity in the economy; secondly, the industrial units were relatively small: the corporations were still very rare. Now this difference is important in many respects, but especially in this respect: that in an economic world in which the productive units are very small these units, considered individually, are not concerned with the total market-demand for the goods they produce; they are only concerned with price. Consider, for instance, the agricultural producer in our times. For the agricultural producer, the price is given by the market; sometimes, it is supported by the Government; in any case, he takes it as a datum. Total de

mand . He knows about price. He tries to reduce his costs in order to have a net margin; that is all he can do. Where as a large corporation, let's take the FIAT, for instance, is firstly and mostly concerned with total demand, with the behavior of total demand for cars. The Fiat managers make market studies and follow monthly or even weekly the behavior of the market. They know that in Italy they cover something like 80%-85% of the total demand for cars and they make their investment decisions on the basis of the behavior of demand. For them, the price is not a datum - they can influence it. Of course, they cannot influence the price arbitrarily; they have to take into account foreign competition and other factors. But they are not compelled to accept the price as datum: they make decisions about price and can support it when market demands go down . If there is a fall in demand, as a rule they simply reduce production in proportion, without changing price. Recently in 1964, in Italy, most of you know that we had a recession though not a serious one. There was also a reduction in the demand for cars, but nobody had to bring about price reductions. We economists know very well that FIAT has immediately adapted production to the change in the market demand. Now the FIAT, is an extreme case, of course, but in several industries many corporations produce an important share of the total output and behave more or less like FIAT. In other words, total monetary demand is becoming the strategic factor in industry; on the other hand, industry has become the most important part of the economy in the advanced countries.

Under these circumstances, the growth of total monetary demand becomes a condition for the growth of the national product - for the growth at least equal to the increase in productivity, or greater, if population and the labor force is increasing. If the spontaneous growth of demand i.e., the growth originating in private investment and consumption, is not enough, then to avoid a tendency to stagnation, a supplement seems to be necessary anyhow; if military expenditure remains stationary, then the whole supplement must come from civilian expenditure; and this, as we will see, already poses serious problems. If military expenditure is reduced to a considerable extent though gradually, then those problems become even more serious.

In the final analysis, the most important reason why one should worry about the economic consequences of disarmament is precisely the strategic role acquired by total demand.

3) In a private enterprise economy, the most obvious obstacles to disarmament come from those pressure groups which are interested in armaments. This problem is especially serious in the United States because there is a strong concentration of military expenditure in certain regions - California and some states of the Atlantic Coast - and in certain industries aircraft, electrical machinery, ammunitions, shipbuilding and a few others. This concentration of military production in certain areas and in certain industries makes the problem of disarmament particularly difficult. Certain industries have now become powerful pressure groups which are in favor of armament expenditure because such expenditure means very good business. Of course, it is possible to give evidence of what I am saying. Evidence has been collected in the States about aircraft companies making all sorts of pressure to get important contracts with the Defence Department and using all sorts of means, sometimes even financing campaigns in the newspapers to hammer in the mind of the people the idea that the Russians are superior as far as aircraft are concerned. President Eisenhower just before leaving his office denounced the symbiosis between the military and industrial people. Everybody knows that some of the most important corporations especially corporations interested in armaments in the broad sense, including electrical machinery, electronics and so on, just hire the generals and admirals who finish their service and they take them on as important advisors, because they know all about the administrative machinery and have relations and influence in Washington.

One, however, should blame not only the pressure of such corporations, but also the attitude of the Trade Unions especially in California, which are not all as peaceful as one might think; they are worried about a reduction in armaments; because this would create unemployment. From the Trade Unions one would expect or would hope, a reaction of this kind: "We are worried about disarmament; but if you prepare a detailed plan of reconversion in which we might have guarantees that the people will be requalified and unemployment will not be a major problem, we will not be against, but we will favor it." This reaction has been put forward, but has not been so vig-

orous as one might have hoped. Maybe the Trade Union leaders do not want to be accused of advocating "planning" of being against "free enterprise" and in favor of "socialism". And yet there is little doubt that large scale, though gradual, disarmament is impossible without a detailed plan concerning the transformations in plants and in the re-adaptation of the workers of the industries and of the regions more directly involved in armament activities.

4) The obstacles that I have mentioned arise in connection with the problem of reconversion. But I think that the most serious problems arise in connection with the question of effective demand of maintaining and increasing the overall effective demand.

How can effective demand be maintained if there is an important process of disarmament? Two types of measures have been discussed. The first one is tax reduction. The second one is the gradual substitute of civilian for military expenditures. The optimistic view, as I was saying before, relies very much on the first measure: tax reduction. They say that if the armament expenditure is reduced we may at the same time reduce the tax burden so that both the consumers and the producers will have more purchasing power to buy more goods; the consumers will buy more cars, frigidaires and other consumers' goods; the producers will buy more machines and plants, i.e., they will invest more. And everything will be in order.. Of course, a sudden reduction in armaments expenditure is out of the question; in any case there would be a gradual process. Therefore, the system might readapt itself gradually: serious unemployment will not arise and the effective demand might not fall at all, but it will continue to grow, owing to the expansion of private expenditure. Now, there are objections to this line and the main objection, which is connected with the Keynesian theory, is that people do not consume the whole of their income but less: they save a part of it. Therefore, whereas the money spent by the government is fully spent, a tax reduction might not create an equal increase in disposable income, which means not only an increasing consumption, but also an increase in savings. And these savings are all right if they are offset by a corresponding investment expenditure. But if investment expenditure is not

enough, then a reduction in effective demand will take place and thus unemployment will increase. There are technical devices which might allow temporarily to overcome the risk (a tax reduction greater than a reduction in public expenditure, with a deficit in the public budget). In any case, if we consider the long run problem of sustaining the growth of total demand, it is obvious that tax reductions cannot be repeated indefinitely. In fact, this can be a complementary measure; it cannot be neither the only nor the main measure.

The main measure would be necessarily the second one: an expansion of civilian public expenditure approximately equal to the reduction in military expenditure; or, looking to the long-run problem, an acceleration in the expansion of civilian expenditure, so as to keep approximately constant the rate of increase of public expenditure.

When the problem is posed in these terms the first answer is: well, it is very easy to find ways to spend money because we need a lot of schools, we need hospitals, highways, bridges, harbors and the modernization of all these things. There is only the embarrassment of choosing between all these different lines. But the problem is much more serious. First of all, and here we see clearly the link between the conversion problem and the problem of effective demand if we stop simply to public works, including schools, hospitals and so on, we are implicitly referring to a very limited number of industries: cement and construction material industries, which are very different from the industries concerned with armaments, for instance, aircraft, electronics, mechanical industry, and so on. So here the shift is particularly serious, because everything has to be converted. The machinery will be different, and the people need very different qualifications. Clearly the problem is not solved simply by shifting the funds from military expenditures to public works. But even to find a similar amount of money to spend in those things is difficult, given the size of the expenditure: let us remember that the problem is to substitute something like 30 billion dollars, although gradually, and to maintain the overall expansion of public expenditure.

There are several obstacles. The first obstacle is

that most of the expenditures, for instance, in hospitals and schools, is made by the State and local governments: very little is done by the Federal Government. The Federal Government might give increasing grants to State and local Governments; but in this case it would be necessary, first to re-organize the administrative machinery of the State and Local Governments in order to enable them to expand efficiently not only the absolute amount once and for all, but also the rate of expansion of their expenditures. If, in view of these organizational obstacles, the Federal Government would want to go to other fields for instance, housing or productive activities, then there is a sort of institutional barrier, because productive activities are left to private enterprises, and if the government steps in these fields, it is attacked as promoting state socialism or something like that. This is an important barrier in the United States. So, in principle, all productive activities are practically cut off from this possibility of shifting public expenditure.

When the whole list of civilian expenditures, which would be desirable to expand, is critically examined, then one realizes that, far from being an easy task, the substitution implies very serious difficulties. There are certain items in the Federal Budget -- like atomic energy for peaceful purposes or space technology and research -- which already show a relatively rapid expansion. But first, the amount of such expenditures is not very large, compared with the size of the disarmament problem; and, in the second place, in these cases the boundary line between military and peaceful purposes is very difficult to trace.

5) Before I finish this first appraisal of the problem; I have to mention three experiences which we can observe in the United States and might seem to give some support to the more optimistic point of view. The first experience is that of the drastic cut in military expenditure following the Second World War in 1945-48*. The military expenditure was reduced from 81 billion dollars in

* See Appendix, Table 1

1945 to 12 billion dollars in 1947 without a huge increase in unemployment. The unemployment which was 2% became 4% - not very serious. 2% is even below the frictional level, i.e., the level which is physiological, because it implies the normal shift of people from one activity to another. 4% is above normal and can be considered pathological but it is not very serious. This experience has been quoted often by economists belonging to the optimistic school.

The second experience is the reduction in armament expenditure following the Korean War. In 1953 the military expenditure was about 50 billion dollars and it was reduced by something like 3.5 billion in 1954, and by a further 6 billion dollars in 1955. In this case, in 1954 there was a kind of setback in the economy, although not very serious. Unemployment rose to something like 5% similar to the percentage of 1948.

The third experience is a very recent one. President Johnson, in 1964-65 decided to reduce the military expenditure from 54 billion dollars to 50 billion dollars. Unfortunately, in 1966, it has been increased again, and it will be increased even more in 1967, because of the war in Vietnam. And that's why I mentioned the figure of 60 billion dollars. But in 1964-65 there was a reduction of 4 billion dollars and there was no setback at all: this time even a speeding of the rate of increase of gross national income took place and unemployment diminished. In a sense, this was an especially happy experience. Which conclusions might we draw from these experiences?

In my view, the conclusions are not very encouraging as one might think at first sight, because we have to look at the total public expenditures (federal, state and local) and not simply to military expenditure. Now in 1965 total public expenditure, in spite of the reduction in military expenditure, continued to rise, though at a lower rate (the tax burden was reduced). In 1954-55, the reduction of military expenditure was greater and lasted two years and not only one; but the reduction of total expenditure lasted only one year, and in

^x See Appendix, Table 1.

that year there was a mild setback in the economy. The only case in which there was a considerable and relatively prolonged reduction in total public expenditure, as a consequence of the reduction in military expenditure, was the 1945-48 experience. But in that period, as several economists have pointed out, there were very special conditions. There was a large backlog of demand for consumers' goods. To cite an important instance the production of cars had been reduced to very low levels during the war, because the factories producing cars, were producing jeeps or even tanks and other military supplies. When people were able to buy cars there was an explosion in the demand for cars. The same applied to other durable consumers' goods and to producers' goods - machinery and plants - since during the war, the firms had to postpone the renewal of their machinery. After the war they had an opportunity and they immediately used this opportunity. There were also liquid assets ready to be spent for this purpose, in the hands of both the consumers and the producers, since a good share of the income which could not be spent during the war were saved. Finally, and this was an important factor which usually has been neglected, something like 4 million women left the labor markets. These women had replaced men who had been in war; when the war was over those women left the labor market and became housewives again. All these factors together explain why a depression did not take place in those years.

The conclusion that we can draw from these experiences is that a reduction in military expenditures of an order of 3-4 billion dollars for one or two years can be quickly substituted by civilian expenditure; and if the tax burden is reduced, this may mean a stimulus for the economy. We don't know about a greater reduction, even if gradually carried out in the course of several years. As I said before, there are reasons to think that the problem would not be easy at all in the case of greater reductions lasting for longer periods.

Discussion following Sylos Labini:
16/6 11:30

(Economic Aspects of Disarmament)

STONIER: I think that an expansion of public expenditure for atomic energy devoted to peaceful purposes and for space technology would also present the advantage of promoting industrial activities similar to those engaged in military production (electronics, missiles and so on) and so would make the conversion problem easier.

SYLOS LABINI: I agree on this point and I'd like to remind you that in 1962 there had been a proposal by Khrushchev to Kennedy concerning the cooperation between the United States and the Soviet Union in programs of space technology and research. That proposal was very interesting because a common program might overcome the mutual suspicions, due to the difficulty of distinguishing between peaceful and military purposes in this sort of activity. In 1962, however, the amount of money spent on these lines was not much. Now, although it is considerably more, it is not so great. And it is not easy to expand this kind of expenditure very rapidly because here the bottleneck is given by highly qualified technicians and wisemen.

STONIER: If it is true that large scale disarmament is viewed with apprehension by the trade unions, it is also true that when the unions have discussed the problem, they have approved the idea of a program of conversion to reduce the risk of unemployment.

SYLOS LABINI: I regret that the trade unions were not pushing on this line much more than they are now doing.

LAPTER: I would like to have further comments on the variations in armament expenditure after the war in the United States and on their relation to gross national product.

SYLOS LABINI: I have here the statistical series of gross national product and of the military expenditure in the United States from 1945 up to the estimates for 1967 (see the appendix, Table 1). From 1948 to 1965 the gross national product has increased on the average, by 4-5 % per

year in terms of money and by 3-4% in real terms. From the level of 81 billion dollars in 1945 military expenditure was progressively reduced to 12 billion in 1948; then, it has almost continually increased (except for the two temporary reductions already mentioned) and for 1967 the forecast is about 60 billion dollars, that is about 9% of the gross national product.

EPSTEIN: Is there any comparable data, say, for Russia and for Italy, concerning the ratio between armament expenditure and gross national product?

SYLOS LABINI: For Russia, the data concerning armament expenditure are very scanty; my estimate is that the percentage of military expenditure over gross national product is somewhat higher than in the United States, but the total amount is considerably less. This is understandable, because the national income in Russia is considerably less; therefore, the burden is higher in Russia in terms of per capita income.

EPSTEIN: I certainly agree with the statement that a serious disarmament in the United States would imply a reduction in the military expenditure of something like 30 billion dollars. But I want to make two remarks. First, I think it is extremely important to bear in mind and even to publicize that there will not be a radical reduction of armament expenditure in a very short period of time. For instance, taking the American Plan for general and complete disarmament: the first stage is three years and implies a reduction in armament expenditure of 30%; a hundred percent reduction would be reached over a period of ten years. That's roughly ten per cent a year, corresponding, for a total of 30 billion dollars, to something like three billion dollars per year. Therefore, the problem is not quite so serious as it is when you first look at it. The second remark concerns the substitution of civilian expenditure for military expenditure: in the United States there seems to be a tendency to shift from the State and local governments to the Federal government certain types of civilian expenditures, like roads, slum clearing, railways, hospitals, schools, and even housing. Moreover, in other fields

there are many new possibilities which are opening up and not measurable now. There is talk about television by telephone; the use of the computers is now spreading to a great variety of uses, so that the production of computers may have a great expansion; and if it is difficult to double expenditure for space technology and research from 10 to 20 billion dollars in one or two years, it is less difficult to have such an increase in ten years. Another area of expansion, not only in the United States, but in the whole world, is shipbuilding; there is room for considerable expansion here. Finally, there is the question of aid to the developing countries, which can absorb in a very short period of time anywhere from five to ten billion dollars a year more. The question is how governments, particularly the government of the United States, can be persuaded to increase the level of aid to underdeveloped countries from one or two to seven billion dollars a year. This again seems to me more a question of education than anything else.

I think that the Report of the Experts of the United Nations on the Economic Consequences of Disarmament, which considers these matters stresses the main points. The problems are planning and the advance preparation. In this connection, I would like to comment on the remark made with regret by Professor Labini, that there was very little being done in this field by the trade unions. The trade unions started some years ago with an idealistic attitude; they were all in favor of disarmament; but over the years they seem to be becoming less interested. Industries were some years ago very sceptical about disarmament, but over the years there seems to be an increasing interest on the part of industry. There are companies who are hiring people now to make studies as to how they can make conversions from military to peaceful production. I have heard of such studies being undertaken in both the electronics and aircraft industries.

In conclusion, I think that the problem of disarmament, which, according to Prof. Sylos Labini's "third school", is very difficult is basically a problem of re-education. The solution is possible, provided that enough

people in the intellectual community that has over the last few years managed to change government thinking. Since we are not going to have general and complete disarmament within a short time, the leaders of thought and opinion should try to increase the amount of education and influence public opinions in favor of the shifting, of the conversion from military to peaceful expenditure. The United Nations certainly is making efforts in this direction.

SYLOS LABINI: I think that your position is not far from the "third school", but that you consider the problem of disarmament not so much as an economic problem but as a problem of education and persuasion; on the whole, your position seems to be less pessimistic than mine - 30% against 70%, so to say, I would like to make clear that my 70% pessimism is due to a rather complex - be it right or wrong - analysis, that I am fully unable to explain here - I tried to explain it a book of mine; it implies a view of development of capitalism which is a dynamic version of the Keynesian theory. In other words, the problem is not simply a static but a dynamic problem, in the sense that probably, under modern conditions, private enterprise economies can be kept growing only if there are stimuli which are external to private enterprises. Such stimuli can be of two kinds: foreign demand and public expenditure. In the post war period the stimulus to the rapid development of the European countries has been supplied not so much by public or military expenditure, as by foreign demand. This applies to countries like Italy, France, Western Germany and even England. In its turn, the expansion of foreign demand has three sources. First of all, the United States: if the United States' economy would have been growing, the international trade in the Western world would not have increased at the rapid pace that we have observed. Secondly, the formation of the Common Market, which is to be considered as a process; this process has contributed and will contribute to the increase in demand. This means that when the process will be over, the rate of increase in the inter-European trade will gradually slow down. That's

why I am much in favor of the Kennedy Round, because a process of that kind will now have to be reanimated, so to say or recreated. The third source of increase in international trade is the demand of backward countries and socialist countries, which are expanding their demand in the international market, especially since the last five or six years. These are the three sources. But the most important source of the post-war growth of international trade is the United States. Now, the trouble with the United States is that foreign demand is relatively not important in the American economy; exports represent only 4% of gross national product, whereas they represent something like 25% in Western Germany, England, France and Italy. This means that in the United States the external stimulus to the development of the system of private enterprises can be supplied only to a very limited extent by foreign trade and to a much larger extent by public expenditure. In the last twenty years the relative expansion of public expenditure has been due mainly to military expenditure. Today the ratio between the total public expenditure and gross national product is much higher than in the past; it is more than twice the percentage of forty years ago (25% as against 10%). But, as the well-known American economist Kenneth Boulding has pointed out, the whole percentage increase is due to the increase in military expenditure and the incidence of civilian expenditure on national product has remained that of the national product. The ratio between total public expenditures and national product, however, cannot go on increasing because this would imply an increasing fiscal pressure, that is, an increasing ratio between the tax burden and the gross national product; and it seems that the critical level has almost been reached. But neither can it diminish - except temporarily. For a limited period, a diminution of that ratio, due to a diminution of the tax national product ratio, can undoubtedly stimulate the growth of the economy (as it has done in 1965). But for a longer period the depressing effects depending on the slowing down of the long-run stimulus to economic development afforded by public expenditure would probably become predominant. This means that in the long-run the ratio between public expenditure and national product should be approxi

mately constant. This is the dynamic background on which the economic problem of disarmament is to be considered. Therefore, the problem is not simply to find an outlet for 30 billion dollars if disarmament is carried out. The problem is more than that. This applies particularly to programs of large scale aid to underdeveloped countries, on which I will discuss in my second lecture. Such programs lack the support of powerful lobbies, whereas for military expenditure there are important political and economic pressure groups who are always pushing for expanding the the allocations in the budget. When there is an increase in the international tension, an additional allocation of, say, 5 or even 10 billion dollars is readily approved, things are different when the question is to raise considerably the allocations in favor of underdeveloped countries.

EPSTEIN: I wish to emphasize that looking at the disarmament problem in dynamic terms, it appears to be less serious when the military expenditure is say, 40 billion dollars out of a gross national product of 400 billion dollars (which were the figures in 1953), and an expenditure of 54 or 60 billion dollars gross product of 700 billion or 750 billion, as in the United States at present. Military expenditure, while growing, is a smaller proportion of the gross national product. It might therefore be easier to cope with the problem of shifting it to civilian expenditure.

SYLOS LABINI. I agree on this point, which I will consider briefly when considering the perspectives.

BJORNERSTEDT: I would like to make two points. The first one has to do with the list of the possible civilian activities which can be developed in substitution for military productions. I wonder whether the process of automation inside industry, already under way, is not likely to become more and more important, so as to stimulate an increasing amount of industrial investments - though I am aware that this might give rise to other problems. On the other hand, if one looks at the scientific community, it seems to have an insatiable demand for resources all the time. In a series of articles in the English journal "The New Scientist", there has been an attempt to describe what the future effects of the present scientific knowledge and

the probable development of science would be in terms of social, economic and industrial changes. These changes seem to be very great indeed, and certainly they would require quite a lot of skilled people. From this point of view, there seems to be no problem of re-absorption of the men released by armament activities, if these are highly skilled technicians; on the contrary, a process of disarmament would increase the possibilities of future developments. My second point is concerned with the big problem of trying to use a part of the resources resulting from the disarmament process to improve the standard of living of the developing countries.

SYLOS LABINI: I agree on the first point raised by Bjørnerstedt; I will discuss the second point - the question of the underdeveloped countries - in my second lecture.

BOSKMA: I wish to ask a technical question: Could you give some explanation on the concept and on the quantitative values of the propensity to save, mentioned in connection with the statement that a tax-reduction does not lead to an equal increase in consumption, a statement, from which you concluded this might bring about a reduction in the rate of growth.

SYLOS LABINI: The economists distinguish between the average and the marginal propensity to save, the former being the ratio between the total saving and total income, the latter being the ratio between the increase in saving and the increase in income. In the United States the average propensity to save is about 15% and the marginal (incremental) propensity to save is somewhat higher. There are, however, complex questions about the shifts over time of the saving function, which have been studied by the economists. Now, the basic idea, coming from Keynes, is this that if you have an increase in total saving, this is all right, provided that the increase in saving is matched by a corresponding increase in investment. Otherwise, the increased saving does not give rise to an increase in income that is, in productive activities - but to an increase in the liquid assets held by private individuals or by banks. This is the basic reason why a tax reduction does not necessarily determine an increase in rational income.

STONIER: I think that the pessimism appearing in the analysis you presented might well prove to be unfounded. You told us, and gave instances of this, that more than once rather pessimistic forecasts made by economists in different problems have not proved correct, because some thing new occurred which had not been foreseen, radically changing a given situation.

SYLOS LABINI: You are, in fact, emphasizing what Schumpeter, in an article published in 1946 or 1947, had call ed the creative response of economic history - the reaction which is impossible to forecast. I am aware of this, but I say that one has to analyze and interpret the observable trends. I tried to do this as best as I could and emphasized the difficulties- not the impossibility - of the solution, because I think that this is the way by which an intellectual can contribute, even to an infinitesimal extent, to the solution of such a vital problem. I am also aware that the difficulties are not simply economical but are essentially political, though both categories of obstacles are strictly intertwined. But I will consider this aspect - very briefly in my second lecture.

SYLOS LABINI - SOME ECONOMIC ASPECTS OF DISARMAMENT, 2
Friday, 17/6 11:30

The picture I tried to present yesterday, on the economic difficulties of a process of disarmament, was rather a dark one, but not entirely dark. There are very serious difficulties in an economic plan for disarmament both for conversion of productive activities devoted to armament and for maintaining effective demand and avoiding a major depression. It is possible to achieve disarmament without a major depression and without the appearance of a tendency to stagnation, but it is difficult. I have concluded yesterday that a tax reduction cannot be sufficient: increases in public spending devoted to military purposes, are necessary. At first sight, it seems that there are a lot of needs which have to be satisfied and therefore there is no worry for finding the channels to spend money saved on armaments; but at a second sight, we saw yesterday that it is not at all easy to increase in a relatively short period the expenditure devoted to civilian purposes, because there are institutional obstacles. And this even if we make - and we should - the assumption that the reduction of armament expenditure is carried out gradually, for instance in six to ten years; since the problem is not simply to maintain public expenditure at a constant level - and therefore to substitute from three to five billion dollars per year - but to keep such expenditures increasing. As I said yesterday, under modern conditions, probably private enterprise economies can develop at a satisfactory rate only if there is a stimulus of a gradual but uninterrupted increase in public spending: at least the experience in this post-war period is that the American economy has been going on developing in a satisfactory way, but the public spending has been increasing both in absolute and in relative terms; such an increase, however, has come to a very good extent from military expenditure.

IV

1. We have left out yesterday the most important item to be considered for spending money in a useful way. This item is aid to underdeveloped countries, which has

the advantage that is also appealing from a humanitarian and even from a political point of view. There is now a lot of discussion about aiding the underdeveloped countries. These countries, which represent more than one half of the world population, produce only one seventh of the world production. The most difficult point, however, does not appear from the photograph, but from the movement of the economies of these countries. The developing countries, the countries which have already achieved a considerably high standard of living, are still going on with this development; the rate of the national income is of the order of magnitude of four to five, and even six percent per year: in these countries, like the U.S., Western Germany, France, England and Italy, the population increases at the rate of something less than one percent per year, so that the increase in per capita income is something like three to four percent per year. On the contrary, in backward countries the rate of increase in income is much less: it is of the order of 2 to 3 percent per year, and the population increases at a rate which is about double that of the already developed countries, that is, something like 2% per year and even more. These are averages, which cover a variety of situations; in certain cases we have a rate of increase of income which is higher, that is, of the order of magnitude of 3%, and in these cases we have an increase of per capita income of 1% a year (approximately 3 minus 2% per year). But in other cases we have an increase of income which is equal or even less than the increase of population, so that in these countries we have no improvement at all and even a deterioration of the economic conditions: per capita income either remains stationary or goes down. Certain countries of Asia are in this situation. India is just on the border line, that is the rate of increase of population, and in the years in which crops are not good, there is even the problem of starvation. Indonesia is in a similar situation. Economists have made estimates of per capita income of these countries; the distance between this income and that of the U.S. is astronomical. It is like a question of the distance between the Earth and Venus, which especially for people who are not astro

nomers, is very difficult to understand; I mean, those estimates imply that the distance is enormous. Now, the main problem does not appear simply from such comparisons; the main problem is that the speed of development of these countries is very low, much lower than that of the already developed countries; and even to avoid an absolute deterioration in their economic situation implies considerable efforts, for two reasons; the first is due to the high rate of net increase of population the second is related to the movements of the so-called terms of trade.

The demographic explosion in the underdeveloped countries - which in several cases "eats up" the whole yearly increase of income - is due to the fact that, in spite of their backwardness, the products of modern medicine do enter and spread in these countries without meeting with serious obstacles; the mortality rate - especially child mortality - goes down relatively quickly, whereas the birth rate takes a considerable time before adjusting itself to the lower mortality rate.

In the underdeveloped countries modern industry is almost non-existent. They produce what economists call primary products, that is foodstuffs and raw materials of various kinds. Now, the price of these products is subject to violent yearly oscillations, with very unfavorable consequences for the economy and for the public finance of these countries. And there is something worse than this in the long-run; in the last decades, a deterioration has taken place in the terms of trade, that this is the ratio between the prices of these products and the prices of the products imported by these countries, which are mostly industrial products. In fact, the prices of industrial products have been going on increasing more or less rapidly all the time, whereas the prices of the primary products either have been increasing at the lower rate, or have remained stationary or have even decreased. An economist has calculated that the whole international aid given to underdeveloped countries in the last 15 years has been just enough to offset 80% of the losses due to the worsening in the terms of trade. So, the situation is difficult not only from the

static, but also from the dynamic point of view. In short, the primary problem of the underdeveloped countries is to avoid a deterioration in their economic situation; then,, they have the problem to improve it, and this implies an increase in total investment, that is, in the resources devoted to increase their productive capacity.

At present, the amount of total investments in the underdeveloped countries have been estimated at a yearly rate of about 30 billion dollars. (Such estimates are necessarily very rough and give only an order of magnitude; but for our considerations precise figures do not matter) As I said yesterday, the total amount of military expenditures in the world is around 170 billion dollars; this means that the total amount of military expenditure is more than five times the money spent for investments in all undeveloped countries.

In addition to the internally financed investments, there is foreign aid, which is estimated at about 5 billion dollars per year, of which 3.5 to 4 coming from capitalist countries (private enterprise economies) and something like 1 billion dollars coming from socialist countries. Therefore, the total investments can be considered of the order of magnitude of 35 billion dollars. The problem in these countries is to increase investments, because this is the way to raise the rate of growth of income. This, it should be added, is not the only way. There is now a discussion among the economists whether it is more important, for economic development, expenditure for investment in fixed material assets (plants and machinery), or expenditure in education (investment in men). Of course, both are essential: you cannot have more machinery without having more people who are able to operate those machines and it is necessary to have people who are able to produce or at least to repair those machines. At the same time, it is even more important to have managers, persons who are able to organize and direct workers and have business relations at home and abroad; and to have politicians and public officials who are able to enact the right laws and to take the right measures to help and facilitate the productive efforts of these individuals and even to start productive activities through the state organization. Therefore an increase

in investments implies a sort of proportional increase in expenditures for education.

2. Now, it has been estimated that, in order to bring the rate of increase of income of these countries from the actual 3%, or even less, to 5%, which would increase the rate of increase of the per capita income of the underdeveloped countries by approximately 2% and avoid a further deterioration in their situation as compared to that of the developed countries, it is necessary to have a 15 billion dollars investment in addition to the 35 billion dollars which are already annually invested. This means that the foreign aid and foreign loans should be raised from the actual 5 billion dollars to something like 20 billion dollars per year: 15 additional billion dollars. This is a considerable figure, but it is less than 10% of the total amount of military expenditures now devoted to armament expenditures in the world. Therefore, at first sight, it would seem that, if disarmament is carried out, this amount of money could be devoted to this purpose, without a serious stress on the resources of developed countries, since a much greater amount of money is now devoted to military expenditures. But in practice the difficulties, here again, are very serious for several reasons.

3. One of the reasons which immediately appears is that these countries are backward and backwardness is not simply an economic affair; it is something which concerns the whole society. IN these countries people who are able to spend this money usefully, that is, productively, are not many. The projects of development of investment are not readily made and when they are made with the help of external assistance, the difficulties to carry them out are enormous. The burocracy is corrupt and inefficient and the most important facilities which in civilized countries are obvious, in those countries are lacking. Therefore, even if you have the money, it is very difficult to spend this money in the right way. When you consider, for instance, Persia or Indonesia, you realize that major reforms are necessary to start a process development. This proposition is accepted by practi

cally all the economists both of the left wing or the right wing, because in these countries it is obvious that without major reforms nothing serious can be done. First of all the reform in the State machine, which is extremely inefficient, with the consequence that to carry out even the simplest public works, like highways or dikes or to organize schools and hospitals, is extremely difficult. In addition to this technical obstacle, there is a sort of fundamental political contradiction, in which especially the U.S. have found themselves. In order to keep their influence in these countries, they decided to deal with the situation as it is. The situation as it is is backward and the leading class very often is the most inefficient, backward and selfish kind of leading class that you can imagine.

Now, it is very difficult to carry out reforms if at the same time you support these leaders, who create obstacles, are themselves the obstacles to the process of development. Often, they are, in words, in favor of the process of development, but they don't want to pay any price for this, they are against the elimination of privileges (their privileges), which sometimes are of feudal character; in short, they are against any type of reform. This, perhaps, is the basic obstacle. On the other hand, in the United States there is an internal difficulty which is very serious. When you have international tension and you have an emergency, then the Congress readily approves important increases in military expenditures because you appeal to patriotism to the national danger and so forth. But when the problem is of voting and approving of large sums to aid underdeveloped countries, then the difficulties are enormous, although in words, everybody is in favor. At present, one finds allocated five billion dollars in the U.S. Budget under the item "International Affairs", but less than two billion dollars can be considered economic aid to underdeveloped countries; the rest is military aid. As you can see, one or two billion dollars is a very small sum in comparison with the minimum additional money necessary for accelerating the process of development in these countries.

Many people now-a-days are convinced that the

problem of accelerating the development of the underdeveloped countries could be tackled properly only through the organization of the United Nations; this would at least reduce the risk that the most powerful countries - be they of the west or the east - use the economic aid to strengthen or to establish their influence on those countries. Is it possible to hope that such a route could really be followed? This presupposes a large scale understanding at least between the U.S. and the USSR. Can we rely on persuasion, can we rely on a gradual and apparently modest work of persuading people in power, politicians and other people who have responsibility, in the military and economic field? Well, we must hope that this is the case, although the experience shows that man learns rather little from logics and persuasion and learns more by very sad experiences. On the other hand, as intellectuals we have the duty to pursue this work, although we cannot be sure that it can be successful.

V

Now, I come to the last point of my lecture, concerning some reflections on the differences between the American and the Russian points of view and on the perspectives that we conceive now.

I spoke yesterday as an economist; the problems I am discussing today are not simply the concern of an economist; and this last point is certainly outside entirely of the field of a student in economics. But the whole problem must, by its very nature, be studied by many angles; and I think that each specialist should try to form a critical opinion also of the aspects which do not belong to his special field. Now, on the questions that I am going to consider briefly, I have found particularly illuminating the analysis presented in different occasions by Patrick Blackett, who is, as you probably know, an English physicist who was rewarded with the Nobel Prize and is now advisor to the British Government. According to Blackett, at the root of the difficulties in the Geneva talks on disarmament, there is the fact, which has been admitted officially by responsible people of the West, like Mr. McNamara, that the atomic power

of the United States is at least five times greater (and probably more) than that of the Soviet Union, if one measures such power in terms of the probable number and power of bombs and in terms of intercontinental missiles. Given this situation, the strategy of the Soviet Union is to keep as secret their deposits of the weapons and missiles as possible, because secrecy, if very strict, can in some way balance the inferiority in terms of power. In the U.S., on the contrary, where the number of bombs is much greater, the secret is much less important on the other hand, in that country it is more difficult to have absolute secrecy, because the movement of people and the press is freer than in the Soviet Union. The proposals of the two powers for disarmament are conditioned by this asymmetry: in the American proposals there is the idea that inspection must come first and disarmament should gradually come later, while the Soviet Union wants just the opposite; i.e., they want first disarmament and then inspection, to put the matter in very simplified but probably not misleading terms. The interesting conclusion reached by Blackett is that from the military and from the diplomatic points of view it is possible to reach a sort of compromise agreement. In other words, Blackett is convinced that from the military and strategic points of view, the difficulties can be overcome; he considers as much more serious the political and economical difficulties (and by economic difficulties, he clearly means the kind of difficulties I have discussed here). At the end of one of his articles,* Blackett makes an interesting hint concerning China. China makes the whole thing much more difficult than it was before, because at the beginning of the talks concerning disarmament the two giants were practically the only ones to have atomic weapons. But now there is China, and there is France. In the more recent period the picture has become darker than before because of Vietnam. In the past, some steps were encouraging, like the agreement about air explosions; but then every progress was interrupted,

* Some of these writings are listed in the bibliographical Appendix.

mainly as a consequence of Vietnam.

Now, the outlook is very indeterminate and the complexity has been increased by the Vietnam War, from the one side, and by China and France on the other.

One possibility is that the international tension will not diminish and armament will go on increasing, as it has done in the last ten or fifteen years. If this is so, then the perspectives are extremely dark, because it is difficult to imagine such a process to go on indefinitely without a war breaking out sooner or later.

There is a second possibility that the armaments will not increase but neither diminish for a long time to come. They will remain as they are now, either because an agreement reached to this effect, or because of a sort of a tacit understanding at least between the U.S. and the USSR. This is a possibility to consider. This would mean a relative diminution of the weight of military expenditure and therefore a relative diminution of the seriousness of the economic difficulties in starting, in a further stage, a proper disarmament process in the U.S., since the total income is very likely to go on increasing (here I refer to the point raised yesterday by Mr. Epstein.)

The third possibility is that a serious disarmament is really carried out, in spite of the difficulties I have discussed here. This third possibility, in my modest opinion, is strictly conditioned by a far-reaching understanding between the Soviet Union and the United States. China, as you know, attacks the Soviet Union saying they have already come to an understanding with the United States. And I think that fortunately to some extent they are right. The process is very slow; but even the war in Vietnam has not entirely interrupted it. As for China, what is striking in her policy is the contrast between the very aggressive words and the very moderate deeds. In any case, if the war in Vietnam does not degenerate in a third world war - further steps of the escalation might well mean the end of civilization - and is readily put to an end, our hopes in the third possibility would be strengthened. Very much depends on the United States. This possibility, which is

the only real alternative to world destruction consists as I was saying, in an understanding between the United States and the Soviet Union, including an agreement to help the underdeveloped countries in a sort of common scheme, sponsored by the United Nations, considering not only the financial aspects (these are secondary) but giving also guarantees of strict neutrality towards the social and political changes that might be promoted by the progressive groups in those countries; let's not forget that the Soviet Union thirty years ago was a very backward country, one of the most backward countries in the world, whereas now, in spite of all her economic difficulties, she is one of the most advanced industrial powers in the world. The development out of backwardness of this country is still appealing to many underdeveloped countries, whose population, often facing problems of sheer survival do not care much of the freedom in the Western sense. In any case, the prestige of the Soviet Union in many underdeveloped countries is considerably great and is likely to remain such for many years to come, inspite of the strong efforts that China is making to undermine it. Therefore, a far-reaching understanding between the United States and the Soviet Union might also have those social and political implications which could facilitate the economic and civil development of the backward countries.

This is the only hope that I am able to conceive. And to be honest I must also say that, although, looking at the experience of the last four or five years, it does not seem to be a queer and far-fetched hope, the likelihood that the real happenings of the years to come will correspond to it, at present does not appear to be very high.

APPENDIX

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2. UNITED STATES: GROSS NATIONAL PRODUCT, PUBLIC EXPENDITURE AND UNEMPLOYMENT 1945 - 1965

(G.N.P. and P.E.: billions of current dollars;
U.: millions of persons)

	GROSS NATIONAL PRODUCT	PUBLIC EXPENDITURES			UNEMPLOY- MENT
		FEDERAL GOVERNMENT		TOTAL *	
		Military Expendi- ture	Civillan Expendi- ture		
1945	212.0	81.3	17.0	92.7	1.0
1946	208.5	43.2	17.1	45.5	2.5
1947	231.3	14.4	24.5	42.4	2.4
1948	257.6	11.8	21.1	50.3	2.3
1949	256.5	12.9	26.6	59.1	3.7
1950	284.8	13.0	26.5	60.8	3.4
1951	328.4	22.5	21.5	79.0	2.1
1952	345.5	44.0	21.3	93.7	1.9
1953	364.6	50.4	23.7	101.2	1.9
1954	364.8	47.0	20.5	96.7	3.6
1955	398.2	40.7	23.7	97.6	2.9
1956	419.2	40.7	25.5	104.1	2.8
1957	441.1	43.4	25.6	114.9	2.9
1958	447.3	44.2	27.2	127.2	4.7
1959	483.6	46.5	33.8	131.0	3.8
1960	503.8	45.7	30.8	136.1	3.9
1961	520.1	47.5	34.0	149.0	4.8
1962	560.3	51.1	36.7	159.9	4.0
1963	589.2	52.8	39.8	167.1	4.2
1964	628.7	54.2	43.5	175.1	3.9
1965	675.6	50.2	46.3	184.7	3.5
1966		56.6 * *	49.8 * *		
1967		60.5 * *	52.3 * *		

* The total includes state and local expenditures.

* * Estimate - Source: The Annual Report of the Council of Economic Advisors, U.S. Government
Printing Office, Washington, 1966-pp. 209, 234, 276, 280.

INTERNATIONAL SUMMER SCHOOL ON DISARMAMENT AND ARMS CONTROL

MAIN PROBLEMS OF EUROPEAN SECURITY
(ROUND TABLE)

Schulze: Wednesday, June 22 - 9:30

You have expressed the desire to hear some comments from Germany; you wish to learn of the growing apprehension to the security of Europe, the apprehension to the fact that Germany becomes stronger and stronger; asking if it is reasonable or not.

I am no scientist in the fields of politics, law, or social sciences, I am a physicist, without any special knowledge in the field of politics.

Professor Markovic has mentioned the demand of the Pugwash Movement; that a scientist should search for the truth without regard to the wishes of his country. Let me speak to you as such a scientist and try to present some aspects, opinions and attitudes of the German people, as I have heard them. What decisions follow as an outcome of opinions and attitudes, no one can say, for the way from opinions to decisions is often complicated and not clearly evident.

We wish to speak about the main problems of European security. For many people, it seems that it is founded on this "Heart of Europe", this Germany which has given so many animating impulses for the development in history but, which also caused so much harm, for example, by murdering 6 million Jews and many other innocent people.

So, we can understand that the fear of Germany increases more and more. We can hear some facts, which seem to support these fears. For example:

- 1) In the last few years, Germany has increased her economical power
- 2) Germany has a strong military power.
- 3) Germany wants the right of contribution by the action of atomic weapons.
- 4) Germany does not accept the frontier of Oder and NeiBe.
- 5) There exist the Urgency Laws by which the government could get more dictatorial power.
- 6) By the action of the police against the political journal "Der Spiegel" the courage of the German journalists to use the guaranteed freedom of the press, might have decreased.

- 7) Many of the newspapers and magazines are in the hands of only one editor (Springer), so that it should be easy to manipulate the public opinion.
- 8) Communism in Germany is considered as the worst in the world. It is determined to conquer the world and take everything by force; everything that one has worked hard for.

Is the fear of Germany substantiated by these facts? I cannot say that such danger is impossible for no one can see the developments by security. But, I am sure, it is not so enormous as it is often presented; it is comparable with the problems in other parts of the world.

In a Canadian research paper, "In Your Opinion", John Paul and Jerome Laulicht have shown that at least in Canada political leaders are less war-ready than the people maybe because they have a better education and better knowledge.

Also the Federal Republic of Germany, the leaders know better than the people the effects of nuclear weapons and that a nuclear war in Europe would annihilate all, so that, for example, the aim of revision of the eastern frontiers could not be reached.

Is such a revision in Germany seriously looked upon or possible? I believe the answer is no!

Most of the people who are not lead by emotion, feel that this might not be possible. But no political leader can risk saying this. It is prevented by the unions of the exiled and the following reactions by the political parties. He, who says this first, is declared by the others who are thinking as he is, a politician of renunciation; his political party must fear to lose many votes.

If it were possible to return to the native land, I think that not many would do this since the economic possibilities are much better in Western Germany than in their former country, especially for the younger ones, and the older ones, who would like to return but, are too old for a new beginning.

It might be regretful if the German government might not be willing to acknowledge a fact officially which has a great deal of internal agreement at this time; the possibility to better essentially the political relations with Po

land and could give a German contribution to a general decrease in tension, and it would cost no more than what we have already paid.

Why does the German government want a right of contribution by the action of atomic weapons and an increase in power? I think it is a question of prestige, for such arguments as: we cannot expect our soldiers to fight with weapons which are inferior to those of the others; this argument may not be convincing.

I heard from Prof. Etzioni that the conception might be fallacy, probably the MLF would give a better protection than the American Power; for the United States might draw back some time later if they didn't wish to risk their own existence, for example, as a consequence of an irresponsible politics of the German government. A MLF without the United States would be a heavier risk for the Germans.

One reason might be that which rules the whole Western World, namely, the fear for Communism. For someone who has fear, is the pistol in his pocket quieter than the telephone call to the police-station?

If the Federal Republic of Germany would change their attitude, it could reach an essential progress on the way to a non-proliferation treaty.

A very important problem of European security is the fact that the official German meaning is that, first, the German question must be solved before other agreements in the field of a general decrease in tension can be found. For the government fears that they would remain with the German Question in a non-tensioned world.

This question was given by Prof. Bertaux in Berlin in 1965 - what is more essential to the Germans - the reunion or the possibility of an unchecked tourist traffic? An unchecked tourist traffic could surely be available more easily in a non-tensioned world. So I feel, we should look for a decrease in tension, before the two parts of Germany have lost their connections to a greater extent.

A lasting stabilized world and European security may only be reached by a European Federation. In this way, the German Question would be solved by itself.

In summary I can say:

For European security there exists a German Problem, but we must put it into the right perspective and it is worse to enlarge this problem as to lessen it. The best solution may be a European federation of all European countries.

NEIZING: Round Table Discussion
Wednesday June 22, 9:30

Well, I am a little bit troubled because I am the unhappy owner of some conflicting roles.....being an official, working for the Dutch Ministry of Defence; a scientist and a politically involved person.

It seems best to me to give you some picture of what is going on in Dutch public attitudes; for, in my opinion, shifts in public opinion ultimately reflect themselves in changes in governmental policies.

In my opinion, the Dutch people had three major shocking experiences in the years let's say 1940 to 1960. First, in 1940, we had a war; a war that lasted five days: May 10 - 15; and then the Dutch Army surrendered. You must realize that we as Dutch people, for more than one century never were confronted with the phenomenon of a war on our own territory. We had some troubles, some uprisings: we had a colonial war in the so-called Dutch East Indies; we had some wars in the last century that led to the separation of Belgium; but since the Napoleonic period, we have never seen the phenomenon of a real war on our own territory. So, we had a sort of "illusion of neutrality". The Dutch Army in the 30's was ill prepared for fighting a war. And our main strategy was based upon the idea of Inundation - a very Dutch strategy I think - for we had a very complicated system of canals and dykes that could separate one part of the Netherlands from the other one.

This strategy proved to be a very inadequate one. The bombing of the city of Rotterdam by German bombers showed this inadequacy very painfully.

This idea of keeping neutrality - one should say the idea of a "splendid isolation" - was indeed an illusion, but it constituted a basis, at least psychologically, of the Dutch Policy and that illusion is now lost.

During the First World War, we were able to keep our neutrality, not as a result of a very fine statemanship, or anything like that, but only by the rather abrupt change in the German command.

In my opinion, this loss of an idea - the idea of neutrality led to two important shifts in public opinion: it stimu

lated a belief in the importance of having an army (and the necessity of having a well equipped army) and secondly, it made for a general feeling of being involved in world politics, at least in European affairs.

A second shocking experience was the Indonesian case. You should realize that the Indonesian affair has absorbed our attention for many years. I won't say too much about this as a sociologist, but one of the basic factors, I think, in the whole affair, was the fact that in Indonesian society there was a fairly rapid change during the years 1940-45, or rather 1942-45 just at the same time, we, the Dutch people, were isolated from the rest of the world. So after the war we had a very inadequate conception of what has been going on in Indonesia. I remember very well, I was a school boy during those years and, as a sort of act of patriotism, we drew maps of "our" Dutch Indies at School. We idealized the pre-War conditions in the Indies before the Indies were occupied by the Japanese as we were by the Germans. This greatly stimulated our "resistance to change" - and there was a lot of change in the Indonesian Society.

So you could see afterwards that members of the Resistance Movement offered themselves to liberate Indonesia. Nobody thought that perhaps Indonesia would appreciate such a liberation. Well, I think our relations to the Indonesians are a sort of a hate and love complex - we have very complicated relations with them - but all these things led to very great political troubles in our country itself, and greatly absorbed our attention for political affairs.

Third: the Cold War. That was for many of us a very shocking experience. You must realize that, during the War, all political groups were working together very closely. There was a Council of Resistance Movement, wherein the Communists had two members, who were considered as very fair colleagues; and consequently after the War many Communists could get very high positions in the Government of the large cities, some of them became "alderman".

What has made a very deep impression on the Dutch people was the declaration of the Communist Party in 1949 that stated that, in the case of a war, the Communist Party in the Netherlands would not join the Dutch Governmental policy. What made an even deeper impression was the fact that all Communist parties in Western Europe at the same time gave this declaration.

So there is a certain connection between the second and the third case (the Indonesian War and the Cold War): by the so-called "loss" of our colonies, we got more and more a feeling that we were indeed involved in world affairs, that we were dependent on what was going on in Europe. It stimulated our feeling of dependency: Communism and Communist uprisings in other parts of Europe took our attention - we had the feeling of being involved in that.

I wouldn't have mentioned these two last things: the Indonesian Affair and the Cold War, if there had not been a third impact of it on public opinion.

Both the Indonesian affair and the Cold War stimulated against the feeling of the importance of having an Army, the idea of being involved in world affairs, but also the absorbance of our attention - I think there is some negative correlation in being involved, in the Cold War matters and being involved, say, in German affairs: the more you are involved in such a Cold War the less attention you have for possible dangerous tendencies in German political life.

In that period, we considered the rearmament of Germany as an inevitable thing. You must realize that the Netherlands is on the edge of Europe and between the Netherlands and the Communist countries there is something like Germany, Western Germany. The rearmament of Germany would help us: It would give us the feeling of security.

So, we started our rearmament too. We set up a modern army and a civil defence organization. There was no place for this army to do exercise, so we needed some place in Germany to do certain exercises and consequently, some Germans came to exercise in our country.

To summarize: the loss of a war stimulated our feelings of involvement; the "loss" of our colonies did the same and absorbed this attention once more. The need for a modern army we realized, having lost a war within five days, and for that reason Dutch politicians once more generally agreed on the importance of military reassurances in the Cold War period.

Now, there are some interesting shifts, I think, in public opinion, that possibly may lead ultimately to some important changes in official policy. For since the Indonesian case is over, and as the chances of an intended major conflict

have been diminished, we have had more attention for other problems, such as the underdeveloped countries, and also the German question. (In my opinion, if you were to ask a Dutchman: what is the German question? (and if he could give an answer to the question), he would not answer: "That is the matter of the reunification of the three Germanies" or the "Case of the Oder-Neisser Line". He would answer this: "I am interested in what is going on in Germany next door".)

Parallel, we have a very interesting increase of interest in what happened during the years 1940-45. We haven't had such an interest in the period of the Cold War; it took all of our attention (shocking experiences need some "incubation period"), but now there is a tremendous amount of books and articles on the War period; and you can observe that many young people are very interested in these affairs: we had very popular T.V. broadcasts about it. (And it is a very good thing that these broadcasts will also take place in Western Germany in translation).

That is what is happening now, and together with minor changes not so important for you to know this will lead, I think in the future, to a tendency in official policy towards a higher valuation of experiments in politics. I don't know exactly what these experiments will be, and how they will turn out exactly politically, but I would like to tell you something about such experiments.

You know that, we, the Dutch, offered a rather great part of our Army to the U.N. standby forces. It was almost the whole Marine Corps; it was a part of our Navy, the only aircraft carrier we possess, we offered, and some other ships and destroyers and small boats; and we offered a motorized infantry brigade and medical troops.

This is a very important thing, I think, for a small country, and of course there are political conditions; I will not suggest that in any case, Mr. U Thant can phone and ask the Dutch Government "Please send me so many people; I need them". There will be political conditions, and what these political conditions will be, I cannot say - I don't know them exactly. But, once you have made such an offer you have to do something

you have to prepare people. There is a new dimension growing in the officer's profession by this. We have to instruct these people; we have to give military people lessons about conditions in the underdeveloped countries, and we have to see that these lessons are very good lessons; not onesided and this naturally gives rise to large discussion too.

There are more experiments, and I think that, for the reason I mentioned, this tendency to a more experimental policy will continue.

ROUND TABLE.

Main Problem of European Security

K. Lapter

(Wed. 22/6 - 9:30)

When we look at the European situation as it is now days, it seems practically that it is the quietest of the continents. From the time the world War II stopped there has been no major clash of arms in Europe. That could give us some sort of feeling of security, which however would be only superficial, because there exist some undercurrents that could disturb this peaceful surface quite suddenly.

It seems to me that, generally speaking, there could be two such sources that could create an unbalance and disturb the European situation (the outside and the inside ones). One could point out, for instance, the dangers arising to some European nations, and therefore, to the whole of Europe, by their alliances, that could involve them in conflicts in other parts of the world. The war in Vietnam certainly presents such danger and American allies in Europe certainly do not underestimate it. Therefore, we have to remember, first of all, that European security could exist only as a part of a secure and peaceful world. This means that efforts toward European security should be directed so as to increase the security of the rest of the world too. But to treat European security as a part of world security does not mean, however, that we have to wait for world security to be established before we can do something to increase European security. It works on the basis of a feedback. By increasing our own security in a proper way, we are increasing world security and the increased world security will increase our own.

One of the channels binding Europe with the whole world is contained in the policy of both superpowers. Any arrangement of European security system is bound to take into account the fact that both of them are deeply involved in European problems. The USSR is certainly geographically a European or mainly a European country and is the leading power of the Warsaw treaty organization. The USA is not a European country, but a leading power in NATO and has quite a large army staying in the Western part of Europe. Both superpowers have many extra-European interests; therefore, it lies in the interest of European countries not to be involuntarily involved in conflicts outside the continent.

Some people describe the European security problem mostly as an inside European problem; as a German problem; and the German problem as a problem of German reunification.

They say that it was the division of Germany into two states that created this feeling of lack of security in Europe. When you look back at the post-war history, you easily find that the division of Germany was not the reason but an expression, result and symptom of wider division than broke, in the late forties, Europe and the whole world into two opposing blocks. It was the breaking up of the great antifascist coalition between victorious allies that started the process during which Europe was broken into two inimical camps. This dividing line went according to the war-time agreements through the defeated Germany that was occupied, divided into four zones and not allowed to form a government. Just because of the division of aims and goals between former allies and as a by-product of this division, both Europe and Germany were broken up too.

Thus the creation of two German states, with opposite political and social orders, was the result of the division of Europe. The factors that were working against this tendency and for the rebuilding of European unity, especially in the second part of the '50s, were at the same time working for the normalization of Germany's position. Some hopes about the re-unification of Germany are therefore closely bound with an all European arrangement. Past experience shows that the German problem (being from the beginning a part of a wider European problem), could be solved only in the framework of a more secure and therefore more united Europe. But looking from the European perspective on the German problem I do not intend to diminish its weight; everybody knows that Germany forms an important part of Europe. For hundreds of years Europe formed a cultural unity and even wars and revolutions could not break this unity for a longer period. Therefore, this unity appears again as soon as milder winds started to melt the ice of the Cold War. The various forms of inter-European intercourse - from the intellectual and scientific level through economics up to sport and tourism, exceed already the manyfold pre-war levels both in quantity and in quality, and this against some still existing obstacles which we all well know and try to dissolve. Therefore, - if you take some sort of a poll either amongst our little gathering or among the European Nations, you will certainly discover that there is no Cold War feeling between Poles, Italians, Englishmen, Frenchmen, Swedes, Dutchmen, Norwegians, Czechs, etc.

I am sure that similar "enquête" between the European governments would bring a similar result; though in this sense - I am afraid it would not be so unanimous; for there is one government in Europe whose policy is looked upon with suspicion by some European governments and people. I will later return to this question.

Certainly, European unity is a peculiar one. It does not express itself in uniformity but in the existence of diversities that form the basis for many national units belonging to European cultural tradition. These differences form the important ingredients of our small continent and are to be found even among the closest allies, and even inside one country. It seems to me that the higher development of cultural unity, the more freedom is reached for the preservation of individual and unique traces that form our common European heritage. Why, then - one could ask with full justification - is there still the persistent feeling that European peace and security are endangered? What makes them shaky and unstable? To answer these questions it is necessary to find out the differences between Europe of 1945 and of to-day.

The post war Europe was dependent on outside help both in economic and in political matters; it was torn by social conflicts and instability. The exaggerated sense of possibility of social upheaval and unfounded suspicions about the danger of an "export of revolution" brought Western European states under the aegis of the USA into NATO; they also were induced to agree to the formation of a West-German state [the GFR] and the rebuilding of a West German army to be incorporated into the NATO structure. Eastern Europe then responded in kind. To-day there are rather few people in Europe who believe in the danger from the socialist countries; and indeed there is no proof that such danger ever existed. The picture was, however, quite symmetrical. The formation of NATO, remilitarization of Western Germany, the economic block of Eastern Europe and other features of the Cold War were interpreted in the East as a sign of Western preparations to intervene in Socialist states with the aim to restore in them the social order they hated and abolished.

To-day in both parts of Europe there is the growing misunderstanding that differences in social and political structure are not forming a real obstacle to cooperation and in some instances even make the cooperation more needed and more fruitful.

There is however, as yet, no way found to reverse the flow of time and to restart with our present knowledge the history of Europe anew, from 1945. So we have to look forward instead of backward and to pull down obstacles dividing Europe; but at the same time we have to build a manyfold net of the neighborly infrastructure of friendly and co-operative intercourse.

There is no doubt that between those two - let's call them - negative and positive factors leading to European security, there is a close interconnection. And here we come to the German problem again.

What then is the heart of this German question? If the unification would be the answer one could only wonder why both German states were, from 1949, drifting apart. What we observe is the policy of Western Germany's Government which proclaims the unification not to be a goal but a precondition to any move strengthening European Security; in this way the GFR is trying to veto such moves, at the same time increasing her armed forces. The Bonn government demanded at the same time to be recognized as an all-German government and declared Eastern Germany just to be an "un-state", just as they were "un-persons" in the well-known book by Orwell. Reunification would mean under such circumstances that the German Democratic republic is to be swallowed by the GFR. The only way to do it by peaceful means was to use the threat of using armed forces and so Bonn concentrated on building stronger and stronger 'die Bundeswehr' until it was more powerful than any other Western European army.

Why this strategy of the GFR? I do not think that the answer is quite simple and that it would be found in an in-born fault of the German Nation. In 1949, when two German states appeared, there were signs of a deep social and political insecurity among the possessive classes in Germany. Especially when these classes in Eastern Germany lost their economic and political power. In the Soviet zone of occupation and from October 1949 in the GDR, the state, brought to existence, was that whose social order did not accept any existence of those who own major means of production.

So it was felt at that time in Eastern Germany that Western Germany, helped by capitalists, mainly by American capitalists, will try to rob the population of Eastern Germany of what they had by Nationalization of major means of production and by some form of agrarian reform. And it was felt - and perhaps even more strongly - Western Germany, that the existence of Eastern Germany endangers the very existence of the ownership class in Western Germany and that

Eastern Germany, could take over Western Germany with the help of German Communists in the GFR supported by the military force from outside.

In the 1940s, this fear was perhaps explainable as well as was the close relationship that developed between Western Germany and the other Western European countries and the United States to keep their social structure intact. And it was still more so when one remembers that both sides believed deeply in an imminent war between East and West. Both sides were trying to get all possible support, and to improve their political and strategic positions, in order to be victorious in the war which they considered unavoidable. But all this lost it sense in the second half of the 50's, and especially in the 60's.

First of all, different social orders in both parts of Germany had shown their viability and were accepted by their populations as a thing to stay. May I add that even in the economic field, both Germanies do well, and the distance between richer and more industrialized GFR and less developed GDR is smaller with every past year. It is now generally agreed even in the western half of Europe that the new generation of Germans in Eastern Germany feel that the GDR is their "fatherland"; their sentimental attachments are directed toward their state; the GDR. The GDR is more recognized in the world as one of the two existing German states. The second change came with the disappearance of the idea of the unavoidability of war; this again allowed for a more realistic picture of a world arena, not dimmed or falsified by wishful thinking or ideological distortions. Europe, i.e., all European nations started to recover their old bonds with each other, across political, social and military block frontiers. The most stubborn resistance to this new trend came from the GFR's government, who refused to agree that there really is a quantitative change in the world and the European situation after 1957. Bonn wanted to continue the old policy in the new situation. And the GFR, no longer the country of 1949; became the third most important industrial country in the world and inside NATO, the second in importance only to the USA. Bonn's Bundeswehr was already the mainstay of NATO which started to look more and more like an American - Western German alliance. Thus the question arose: What will GFR do with her recovered might? Will it use it for the benefit of peace and security in Europe or against it? Are there still some possibilities to influence the direction of Bonn's policy? And if yes, then how? The growing industrial power of Western Germany is by

itself not a disturbing factor. It is allowed to raise the standard of living of a major part of the GFR's population, it helped to assimilate those Germans that came from the territories that belong now to Poland and Czechoslovakia and that are settled by Poles and Czechs. So it is with an increasing percentage of the GFR's participation in the European and world trade. Both these factors effect the trade and industrial relationship among Western European countries, make for some difficulties for these countries and tend to give too big an influence to the GFR inside integrated economic organizations of Western Europe. That's true. But under proper circumstances there is no necessity for the GFR automatically, by her sheer weight, to gain a decisive preponderance and the position of strength, which Western Germany could utilize forcing other Western European nations into economic submission. One of such steps, that will not allow any country to dictate its will in economic matters to others, is to enlarge the territorial scope of various organizations which bear the proud name of "Europe" but which really do not even represent "little" Europe. By combining all economic forces of all European states while at the same time preserving their independence and equality of status it is possible to develop all European resources for the benefit of all European nations forming in this way a structure of checks and balances against any power that could wish to subordinate economically, financially or politically other European states. Much more serious is the growing military might of the GFR. What is disturbing is not the size of Germany's military forces inside NATO nor even the fact that they have started a parallel development of territorial units outside NATO. Under the existing circumstances West Germany still cannot hope to overcome, militarily, countries lying to the East or to the West of her; her treat to use armed forces will not blackmail GFR's neighbors into surrender.

Real dangers to European security are connected with the GFR's policy of utilizing the existing tension in Europe to improve her position against both East and West. The GFR had thrived on Cold War and it is only natural that its government with difficulty only gives his consent to the "détente". And perhaps even more important is GFR's government policy of acquiring ever more elements of "co-ownership" in nuclear weapons, while building at the same time powerful nuclear reactors.

The first policy is usually presented to the public as a rightful demand for German reunification. There will not be peace in Europe - we hear, with clearly threatening overtones, from West German politicians - as long as Germany is divided; therefore without some steps towards reunification there will be no détente in Europe. I mentioned already that under Bonn terms of reference the reunification means first of all an unconditional surrender of the GDR. But not only that. Under the same terms Bonn understands a take over of West Berlin and its claims to territories belonging to Nazi Germany in 1937 and now settled by Poles, Czechs and Russians. Under the very same word "reunification" one could expect sooner or later demands for the Anschlusse with Austria, for incorporating region of Adiga and the provinces of Alsace-Lorraine. Therefore the very vital interest of all European nations demands that all GDR's rights as an independent state must be defended. The method of reunification of the two German states under existing conditions could not be equivocal to other countries and could be acceptable to them only if achieved by progressive agreements between the governments of the GDR and GFR accompanied by proper security arrangement of all other European states. There are signs that in some important parts of German society there is a growing understanding of these facts of life.

But this understanding did not as yet reach the government of Professor Erhardt. Witness his note of March 1966 that was sent by the German government to some hundred governments both in and outside Europe. The tone of this note is softer than the pronouncements we heard from the GFR's government until the present. That's true, but the sense remained the old one: to isolate the German Democratic Republic because as long as she exists all other directions of possible territorial expansion of Germany are blocked. But for this very reason all European nations, Poland included, are interested in preserving GDR's independence and her right of self-determination.

The recognition of a vital role of GDR in present day Europe is connected also with understanding that an irresponsible step of the GFR threatening the independence of the GDR could involve whole Western Europe in the most dangerous adventure that could change our continent into heaps of ruins.

One can also put, in another way, the same reasoning. The security - just as peace - is indivisible. There could not be a real security for the West only or only for the East. This is not only the lesson from the interwar years, but also from the past twenty war years. Therefore, only the

cooperation of all European states/ and on this basis, the dissolution of the existing opposed military blocks/ might form the basis for European security. And there are - humanly and logically thinking - certainly more chances for better relationship and in the future some form of unification of both German states in a secure Europe than in one divided in two inimical camps.

The dangers involved in Bonn's policy of "reunification first, security later" is still more underlined by Bonn's demand of partnership in Nuclear capabilities. This is another source of danger confronting the security of Europe.

Quite a lot was said in our seminar in connection with the so-called "proliferation" of nuclear weapons. So let me add just a few points only. First: on the problem of Germany's "discrimination". Great Britain has the bomb, France has the bomb, so why can't Germany have her own Bomb? There are over 4,000 nuclear charges on German territory, as we were told some days ago by the Secretary of State, Mr. McNamara, but none of them is under the sole control of Germany. Doesn't it form some kind of discrimination of the GFR, which renounced / in the Treaty of Paris/ her rights to produce the ABC weapons on her own territory, but not the rights to acquire them by other means? May I mention, by the way, that in the yearly issue of "Military Balance" prepared by the London Institute on Strategic Studies one finds an unexpected information that Western Germany's power reactors produced this year enough fissionable material to make about 100 Hiroshima-type nuclear bombs. But, if you look deeper into this matter, you'll find that Western Germany is trying by a step-by-step method to get for herself nuclear capacity through some intermediary stages like Multilateral Nuclear Force or other forms of co-ownership or co-control. And having bigger industrial capacity the GFR could quite quickly leave Great Britain and France far behind in this respect; Great Britain and France, however, are permanent members of the UN Security Council and have therefore special duties - and special privileges, given them by the UN Charter. So the problem boils down to concede that the GDR should be allowed to have a privileged position in comparison with other non-nuclear European states. In other words the GFR should have full or at least partial access to the nuclear weapons, while other European countries should not. But it is quite certain that the nuclearization of the GFR will almost automatically bring about a race for the acquisition of nuclear weapons by many other European, (and quite a few outside Europe) powers. The position of the GFR is therefore factual for the proliferation of nuclear weapons and only a few people could envisage, that with the nuclear bomb in almost every state, Europe will be more secure.

CICANOVIC: ROUND TABLE ON PROBLEMS OF EUROPEAN SECURITY

(Wed. 22/6 9:30)

I shall be very brief since I do not intend to give a lecture. I will simply limit myself to a few comments on European security, as I see it, not only on the basis of our discussion here but as I follow that question in general, since it is rather carefully followed in Yugoslavia. I don't think that I should especially elaborate on why Yugoslavia is so much interested in the security of Europe - that is quite well known and understood - and I would not have time to do it anyway.

There are opinions in my country, voiced in our Parliament that we are not even doing enough on the question of European security, at least not as much as we should.

There are also opinions that if there are two Yugoslavs, they are entitled to at least three opinions.

As far as European security is concerned, I would like to begin with an optimistic remark, speaking of the situation today in the relations among states of Europe. Of course, I have in mind certain dangers that might come due to some trends today. But speaking of the situation in Europe in general, I feel that there is a greater basis for optimism than for the feeling of imminent danger. That feeling of danger I have as far as disarmament is concerned in general, and I am not such an optimist there.

To my mind, Europe is a part of the world security system, or rather, the problems of European security are the problems of world security. Speaking of that inter-connection in security matters there are regions in the world where such events are taking place that are threatening the peace in the world much more than the situation in Europe but that is not on our agenda.

Since we are in Europe and we are discussing its problems I should say something about that.

Frankly speaking, there is also the danger in Europe the danger to the security of European states - that is the policy of the Western German Government. And I am particularly concerned that it is West Germany which is striving to get hold of nuclear weapons.

Although Professor Lapter has just said that history does not repeat itself or it would not be history, I have a feeling that, at least in some cases, history does repeat itself. We can see it even from our discussion here. Many things point out to a very dangerous course of development, as far as West Germany is concerned.

Speaking about that situation, it would be very interesting for us to discuss what is the popular opinion inside West Germany. I feel that the public opinion inside that country is a very important factor, as far as the intentions and the policy of their governments are concerned. I am afraid that I do not find very much encouragement in that respect. I do not see any large peace movements, as are to be seen in some other countries. I do not hear official statements, which could be taken at least only as statements; in the sense that could be encouraging. There is a strange feeling that was just mentioned by Professor Lapter humoristically, that "they are trying to do it again", which somehow sticks to my mind, on account of what is going on there.

Speaking about the process of coming together among the people and countries of Europe, I find that the only country which is outside that movement for unification - I am not speaking of a supernational unification, but of the friendly cooperation; or coexistence - is Western Germany. There are many signs that such cooperation is possible, but in these efforts for cooperation the West Germany official policy is a sort of obstacle in achieving better and healthier relations in Europe. Regardless how you take their policy - either as an argument, or a bargaining position or a threat. The particular danger for Europe is in the German attempt to acquire nuclear weapons I will not be very diplomatic in my language now, since I am not speaking here as a diplomat, but as a citizen of Yugoslavia in his private capacity, therefore I will not define whether it is "access" or a "strategy planning", or "participation". To me it is practically the access to nuclear weapons. Many assurances were given that it will never happen that Germany will never acquire nuclear weapons; on the other hand, none of these statements came from Western Germany. Here lies the main obstacle in negotiations about the non-proliferation treaty. I feel however, that there is a way to put very clearly to Western Germany that this is not the way to security.

There is a possibility to do it now, due to the very situation we are having in Europe. There were times of the Cold War, when it was thought in the West that there was a threat of the Communist invasion of aggression on the part of Communism. This opinion has changed, not only in Western European countries, but in the United States as well. It has been mentioned here by some of us. People have come to realize that there is no aggressive intention on the part of the Soviet Union or any other socialist country; that they want peace in the world, as well as the Western powers. They do not want nuclear catastrophe. The situation is, therefore quite new and people begin to feel it. I think that there is space for argument that there is no need to arm and to acquire nuclear weapons in order to defend oneself from communism. I would have that position had I been a German also, of course, that feeling would be much stronger had I been the citizen of a country much closer to Germany than my own. In the case of the use of nuclear weapons it would not be only Germany to be affected. The problem of escalation is very closely connected with the problem of proliferation, that is, in this case, giving the Western Germany access to nuclear weapons.

As it was mentioned here they have on their territory quite a large number of these weapons, which is also a very dangerous thing, bearing in mind their official policy.

Finally, we must also remark - speaking of European security - on a very considerable contribution to that security gained through the bilateral processes that are going on today in Europe on the establishment of friendly economic, cultural trade and other relations. These relations create conditions for political settlements.

Following the policy of cooperation with all countries the policy of peaceful coexistence - in my country, for one, has very good relations with all countries of Europe, except West Germany, due to her policy, and Albania. Taking these two aside, and having good relations with other states with different social and political systems, could serve as an encouragement and a proof, that with a friendly policy we may have good relations in Europe. In fact, this is the policy of some other European countries to a certain extent.

The problems of European security could be solved; in my opinion, through a long term process, which has at the moment a rather good start towards peace - taking aside the problem of proliferation.

The problem of nuclear proliferation in Europe will be I am sure, discussed in the general framework of proliferation problems. Proliferation, being an urgent problem, will be settled much sooner than the question of the formal unification of Europe.

Things in Europe are going very well at the moment but the question of disarmament is not progressing so well. I will not talk any more, because I am sure there will be many questions. Thank You..

Round Table on the Main Problems of European Security

Intervention by KORSGAARD PEDERSEN

Wed. 22/6 9:30

Well, we really have a great deal to digest this morning, not only on European security, but also on other questions, and I must say, I hesitate to bring in new lines of thought. But I shall try to be very brief, and I shall speak only on European security questions.

Let me begin by a few optimistic remarks about the present situation in Europe. If we go back in our memory to the years immediately after the war, I think we all remember a feeling of an imminent threat against our societies by the Soviet Union. There are some people who say that this threat was not a real one. I do not want to go into that, but I think that it is a fact that the threat was felt by everybody, and almost every day. Now, fortunately this period has come to an end, and we have seen in the last ten years or so a development in another direction. New trends have prevailed. We have been able to develop the relations between the Eastern countries in Europe in a rather extensive way already, and we have found out that it is possible to discuss things with each other, and also that it is after all possible to live with great underlying problems unsolved. I think that, when you discuss the possibilities of European security arrangements, you may begin by saying: well, after all, we have a European Security, already created by the system of defence alliances, the members of which are now coming on speaking terms with each other. The situation may go as it is, the bilateral exchanges may be still further developed. I think that it is most likely that for some years many things will just continue in the direction that they have taken in the last five or ten years.

But, when that has been said, of course it must be emphasized that there are underlying problems of great magnitude. We cannot hope to solve these problems in the immediate future. But we must do our best to try to develop our ideas with regard to their solution when the time is ripe.

I think it may be said that there are two major problems for European security: one is the German problem; and one is the Soviet problem.

To begin with the last one, the Soviet problem, we no longer feel the threat as imminent as we did right after the War; but the very fact that the Soviet Union - one of the super powers - is so close to the smaller European states, will

I think, always mean a problem for them. This can perhaps be illustrated by a comparison with the relations between the pre war Soviet Union and the small Baltic Republics on the edge of the Soviet Union; now we have a Soviet Union which is much stronger than it was in the '30's and we have all the European countries at the edge of the new and stronger Soviet Union. This comparison is of course not a correct one, but it may illustrate what I mean by the Soviet threat. I don't think that the ideological side of the problem is very important. It is simply the problem which always exists between a super- power and the small powers at its frontiers.

The existence of this problem, I think, leads to accepting the necessity of a direct American responsibility in Europe in order to create a lasting balance. The other problem, the German problem, is perhaps of a threefold character: There is the problem of reunification, the problem of the final settlement of the German frontiers, and finally the problem of how to secure that a reunified Germany will not come to dominate its smaller neighbors. I see a certain parallel here between the danger of Soviet domination and the danger of German domination. In both cases we have a big power surrounded by powers of rather small size

I think that, in trying to find a solution of these two major problems for European security, one might think of a distinction between the establishment of a solution of the German problem on one hand and on the other hand the responsibility for the continued existence of the equilibrium in Europe established by the solution of the German problem.

In the first situation, which regard to the establishment, I think it is essential that there is a common and equal Soviet and American responsibility. With regard to the continuation of the established order, I think the European states have to rely much more on themselves. Then of course there remains the problem, how can the European states rely on themselves in their relations to Germany, which would be the biggest state in Europe and would have between 70 and 80 million people, and have an enormous economic power. One might be tempted to try to enforce on the reunified Germany rather strong restrictions with regard to the possibility of re-arming and of dominating the surrounding countries economically. But I think that, if we make such provisions for a reunified Germany, we run into the danger of doing the same thing as was done right after the First World War by the Treaty of Versailles, namely, creating a situation which cannot mentally be accepted in Germany; we would have a constant

pressure - the Germans would feel that they were under a constant pressure from outside, and this pressure would produce a counter-pressure in Germany - and I don't think this way is a good one.

What then should one suggest? I think that the only way, although it is the most difficult way, is some kind of strong European integrational system - and I am thinking more of an economic integration than a military integration. In this way we might create a situation by which Germany would be treated on an absolutely equal footing with the other European countries, but would - like any other European country - not be able to act on its own account in any dangerous way.

I realize that the creation of such an integrated kind of cooperation in Europe is extremely difficult and that it could in any case, only be created in a distant future; but I do think that is a line of thought that one should consider.

Well, there is much that I would have liked to say, but I don't want to take too much time. You may say that I have only presented generalities here, and I agree with this, but let anyone who wants to be more precise on these questions, make his contribution.

Thank you.

ROUND TABLE: Civil Defence v. *pulla europea*
Bjornerstedt - Fri. 17/6/56 - 16:00

With reference to Civil defence, the situation of a small country is quite different from that of a major power. A confrontation between the major powers, with or without nuclear weapons, would not necessarily involve the small country in the same way as the major powers; there may be more time to prepare against the effects of the war and civil defence measures may therefore be more efficient. There is also the difference that the major powers consider each other as primary opponents whereas the smaller countries, especially the non-nuclear ones, may not be in the first line of fighting.

Coming from Sweden, I represent a country which has come to rely on the instruments of civil defence much more than any other country. It may therefore be useful to give you a short description of Swedish civil defence. There exists a shelter program for the construction of blast shelters of two different kinds. The first has a protection level corresponding to between 0,3 and 1,0 atmospheres of over pressure. On a population of roughly seven million people there are shelter places of this kind for close to three million. All these shelters are situated in the cities. The other kind of shelter is much stronger, the protection level is around 10 atmospheres of over-pressure. So far; over 100,000 inhabitants are provided with protection in this way.

The first kind of shelter was designed to house the people remaining in the outer parts of a city or those waiting to be evacuated. The second kind is for those that remain in the central regions of the larger cities.

There is also a program for population evacuation. Also in this connection Sweden has a world record. The evacuation plans concern more than half of the country's population, which means that about 90% of the urban population may be moved to the countryside. These two measures, shelter construction and evacuation plans are undertaken in peacetime and designed to limit casualties among the population. A third part of the civil defence program concerns rescue after an attack. This is an organization which involves about 300.000 people selected and trained in a similar way as in the military conscription system. The training includes fighting of fires, rescue of wounded out of the target area, etc.

In this short description of Swedish civil defence may I finish in saying a few words about the reasons that have prompted a program of this kind. The main reason was the experience of the second world war as seen by a country that did not take part but had the opportunity at close hand to observe the effects of the use of different weapons against a population. This experience was a precondition for the civil defence program.

Another precondition was that the economic situation in Sweden was much better than elsewhere in Europe or many other parts of the world. There were therefore available the means to implement a civil defence effort. This explains that a blast shelter program was introduced immediately after the world war and that it has been in operation since. This also explains the high proportion of shelter places. This program has been adding a relatively small number of places each year, but even so the total result over 20 years becomes impressive.

Let us now consider in what way a program of this kind may be useful to a small nation. Two different types of arguments may be put forward concerning planning aspects and operative considerations respectively. Beginning with the operative questions, it is obvious that if there is a civil defence system and if there is an attack, conventional or nuclear, then there is every reason to use the civil defence system in the best way possible. This is so far simple humanitarian reasons and also from other points of view it would be rational policy. The situation is quite different when the planning is discussed. Then there are two things to have in mind. First comes the question whether a civil defence program could play a vital role to national security: could it impose on an aggressor a higher price to achieve the objectives of his aggression? To some extent civil defence can meet a requirement of this kind. Especially a strong shelter program will force the aggressor to use more weapons and more powerful weapons in order to produce the intended damage. However, this increase in cost is marginal. The main conclusion in this connection is that no matter what kind of protectionary procedures are undertaken, one cannot prevent a nuclear attack aimed at population targets from being successful. In connection with conventional weapons as well as chemical and biological ones, civil defence may be more effective but one would still expect heavy casualties. The con

clusion is from the planning point of view that it is not rational to try to achieve a civil defence that can prevent an aggressor from obtaining his objectives should he be prepared to use nuclear weapons. The only reasonable motive for civil defence in a small country would be in connection with other types of attack. One may consider nuclear attacks that are not primarily directed against the population but which would still give side-effects among the population. Civil defence could also be planned against attacks with other weapons than nuclear ones, whether they be directed primarily against the population or not.

In connection with attacks against military targets two measures may be thought of. On one hand, one may try to separate as far as possible military and civilian targets. This should make it possible for an aggressor, if he so wishes, to maintain a distinction between military and civilian targets. In so far as this is impracticable there is secondly some possibilities of protecting the population the effects arising from attacks against military targets.

This discussion leads to the question, valid for both major powers and small nations, whether it is possible to differentiate between a strategy which is based on attacking civilian targets and other strategies which avoid such attacks. If so, it may be possible to arrive at an international understanding to avoid population targets in the case of war. This is for the future a very important question which involves for instance the current development of antiballistic missiles.

CIVIL DEFENCE

Friis-Møller 17/6/66 16:00

One problem which is conceptually linked to the general area of civil defence and which - for better or worse - is likely to play an important role in the international discussions on arms control and disarmament in the years ahead is the question of the antimissile missiles. For years the debate has been going on about the possible consequences for arms control of large scale civil defence efforts in terms of passive defences like preparations for evacuation of vast segments of population to areas considered safe, and crash programs for construction of fall-out shelters. This debate has remained largely theoretical mainly because whatever limited progress has been made within the area of passive defences has been carried out in an orderly routine-manner and has never reached a level where one of the superpowers has denied the other the ability to inflict what is generally called "unacceptable damage" upon it. The prospects for the achievement of some sort of meaningful defence against missile attacks in terms of active defences now emerging on the horizon raise questions which have ramifications into the central concept of the deterrence. The concept of active defences against missiles corresponds with the apparent - though not necessarily correct - logic, that no offensive weapon in history has ever been left without its defensive counterpart. Furthermore it appears to be psychologically more attractive than the idea of shelters and all that goes with it. The outcome of the debate about the program for construction of a nationwide system of fall-out shelters in the United States in the early Sixties is a case in point.

The following remarks do not purport to be in any way comprehensive but only to shed in a tentative way some light over aspects of the problem of anti-missile missiles. Very little has been disclosed by either the United States or the Soviet Union as to the precise technical nature and performance of their respective defence systems. Basically the American system - on which some 2 billion dollars has been spent on research and development over the last 5 - 7 years appears to consist of three components: 1) an area defence missile, Nike Zeus, which is designed to inter-

cept incoming missiles in the last phase of their exoatmo-
spheric ballistic trajectory, 2) a short range, very fast
missile, Sprint, designed to intercept such incoming mis-
siles that have not been destroyed by the Nike Zeus missiles
and 3) an advanced long range radar detection system. Cost
estimates for production and deployment of a weapon-system
of this kind vary greatly depending upon the size of vari-
ous proposed deployment configurations from 7 - 8 billion
dollars for a relatively modest system to some 40 billion
for a large system. The present American administration has
its doubts about the cost effectiveness of the system but
pressure is being exerted upon it from military profession-
als and interested industries to go ahead and deploy at
least a small anti-ballistic missile system.

The Soviet Union has, at a couple of occasions,
made public displays of rockets which are claimed to be
anti-missile missiles. The West European and American Press
has carried reports to the effect that missile-defence sys-
tems are being deployed around Moscow and possibly Lenin-
grad. Nothing has been made public about the technical na-
ture of the Soviet missile defences and more importantly
about the order of magnitude of an eventual Soviet missile
defence system.

Both superpowers thus seem to be at least at the
threshold of a new phase in the qualitative development of
strategic weapons. It seems more than likely that both will
try hard to develop new and more sophisticated offensive
delivery vehicles for nuclear weapons in order to deny the
opponent any advantage it might derive from the defensive
system. Whether the offensive or defensive side will come
out as a winner in a new cycle in the strategic arms race
is anybody's guess, of more immediate concern are the pos-
sible effects upon East-West relations generally and upon
the prospects for progress within the field of arms con-
trol and disarmament.

The most conspicuous effect perhaps is that the de-
ployment by either side of anything more than a token sys-
tem of defensive missiles would trigger off a new round in
the qualitative strategic arms race. It is worth recalling
that the background of such a development would be the rela-

tive stability which has characterized the general area of strategic weaponry in recent years after the introduction of reasonably well protected intercontinental and submarine based solid fuelled missiles. This situation together with the knowledge which exists in both East and West about the major characteristics of the components of the othersides' strategic forces has contributed to the general climate of détente in recent years and thus also to the hopes for progress in the fields of arms control and disarmament. A new strategic arms race is not likely - at least in its initial phase - to upset the existing global military balance and create an entirely new relationship in terms of military strength between the Soviet Union and the United States, but as the long term goal of the race is unknown even to its major participants it would be a matter of utter guesswork to try and forecast the situation 15 or 20 years from now. There is no law of nature which requires the balance of mutual deterrence to form in infinity the framework for the military equation between East and West. What seems certain is that those who feel, that the goal should be to stabilize the present balance on a lower, safer and less costly level will come up against strong odds in case the anti-missile missile sparks off a new strategic arms race.

In all likelihood a new arms race will have a negative effect upon East-West relations generally and US-Soviet relations in particular. One element in this development is, that neither of the superpowers even if it has complete knowledge about the extent to which the other side has deployed defensive missile systems will be able to get information about the precise performance of the other sides defences or about the effectiveness of the other sides new generations of advanced offensive weapons against its own defences. Military establishments behaving like they use to will rather overestimate than underestimate the strength of the opponent and the new turn in the arms spiral will be propelled by fears and suspicions which may spread to other areas US-Soviet relations. Another element in the problem is the risk that each of the superpowers at a time when their missile defences have reached an intermediary stage of development, that is a stage between a very low confidence, small scale defence and big practically-watertight

systems, may fear that the other side is now so confident in his own defence, that it feels tempted to initiate a major strategic counterforce campaign to disarm the opponent to a degree which would leave it an insufficient number of offensive missiles to penetrate the defences. The fear of a major preventive surprise attack cannot but contribute to a souring of big power relations.

It has been argued that a so-called "high posture" in military technology on the part of the superpowers would discourage potential nuclear powers from making use of their nuclear option and thus have an inhibiting effect upon further nuclear proliferation. Although there may be some element of truth in this thinking as far as one or two special cases are concerned it seems far off the mark as a general proposition. Firstly most of the potential nuclear powers at the present time do not seem to be interested in acquiring nuclear weapons with the purpose of deterring an attack or nuclear blackmail from one of the major nuclear powers but rather - as far as military considerations go - in order to exercise influence through a strategic advantage upon a hostile power, nuclear or non-nuclear, within its own region. Whether or not the superpowers would establish impenetrable defences or drive the whole state of the art of nuclear weaponry to a level unattainable for any other country seems largely irrelevant to the security problems of the majority of the potential nuclear powers. Secondly, a large measure of sustained cooperation between the United States and the Soviet Union seems to be required if the problem of nuclear proliferation shall get anything more than superficial short-lived solutions. The political climate generated by a white-hot strategic competition between the superpowers may prove not to be a suitable atmosphere for the thriving of such common venture.

Another consequence of a renewed strategic arms race which probably will influence the future decisions of the potential nuclear powers but which is also of larger importance for the world community is, that the possibilities for achieving international agreement on limitations in the field of nuclear weapons will be severely limited and that some of the most enlightened

and promising proposals currently negotiated in the 18 Nations Disarmament Committee in Geneva will go down the drain in the process. Some of the most outstanding victims of such a development will be the American proposal for a qualitative and quantitative freeze of strategic delivery vehicles for nuclear weapons, the proposal for a comprehensive nuclear test ban and probably the proposal for a cut off of production of fissionable material for military purposes. As these and related subjects form the bulk of the topics discussed in the Geneva Committee the very existence of this forum might be threatened as the futility of its proceedings are revealed.

In view of these and other negative discernible consequences of the introduction of anti ballistic missiles into the existing strategic equation and the inherent unpredictability of the longer term-consequences of yet another phase in the US-Soviet struggle for strategic supremacy -- included also possible deterioration of existing alliance loyalties -- it may well be, that the interests of the world community included the superpowers themselves would be best served by a large amount of restraint in the area of further technological development of strategic weapons. Preferably such a restraint could take the form of a formal American-Soviet agreement not to deploy missile defences of any character whatsoever. Second-best in case the United States thinks that the Soviet deployment has already reached a level, which excludes such an agreement, a formal or informal understanding between the superpowers only to deploy anti-missile missiles on a limited scale which would not reasonably constitute a motive for the other side to develop the offensive side of its strategic nuclear arsenal.

CIVIL DEFENCE: Stonier Fri. 17/6/66 16:00

The topic of civil defence has a fitting place in a discussion of disarmament because it constitutes the very antithesis of disarmament. If the arms race accelerates, once again, or takes a new direction; it is most likely to involve this particular area. Therefore, we ought to put some thought to this question by reviewing the development of civil defence in the United States following World War II, which I will do, while Bjornerstedt will review what has been going on in Sweden. Both of us intend to touch on the question of anti-ballistic missiles (ABMS) because their potential development is now closely interrelated with the concept of civil defence. We will also try to present some of the political implications of these problems

In the United States there was a sort of half-hearted civil defence program immediately following World War II. The civil defence organization was a good place, an honorable place, for retired admirals and generals to expend their energies, and I don't think that civil defence was taken very seriously by anybody including the retired admirals and generals until the late 1950's. At that time a new dimension was introduced, viz., the creation of a Russian intercontinental ballistic missile (ICBM) system. For the first time the United States clearly was no longer invulnerable from destruction.

Now I might say that this apparently new threat did not make as much of an impact in the public mind as might be imagined because the newspapers had been full of scare stories during the 1950's. One could pick up almost any Sunday supplement of a newspaper and discover how many Russian Badgers (or other types of planes) could come over the North Pole and devastate the United States. So the ICBMs were not that much of a new consideration in the popular mind, but amongst strategic planners they began to take on a greater and greater significance. Thus it was Herman Kahn, who articulated the thought: "Look here, the United States is committed to protecting Western Europe, and our protection simply is not going to be creditable if we remain as vulnerable to nuclear attack as we are. The Europeans won't believe it. Our allies won't believe it, they won't stay with us. What's worse the Russians may not believe it, and this will lead to grave mis

calculations. Obviously we need a shelter program to reduce the number of casualties in case of nuclear war."

In those days, the assessment of nuclear war was still a lot less sophisticated than it is now. There was a feeling which went something like this: "The difference between nuclear war and conventional warfare is quantitative. Nuclear war is a lot bigger, but the only thing that's really new is fallout. That's wholly new. We've never had to contend with that. The answer is to get the population protected from fallout, and this can best be done with fallout shelters." Thus following a series of discussions, systematic efforts were made by the government to get fallout shelters throughout the United States to provide population protection against these particular consequences of nuclear war.

The peak of the push to get fallout shelters at the national level was in the period of 1961-62. However this had been preceded by an earlier phase: Governor Rockefeller in the late 1950's, in New York State, proposed a state shelter program. (At that time I belonged to a group of scientists which had been speaking to lay audiences about radiation in general, and fallout in particular. We began getting questions on the New York State shelter program. This was the beginning for me in examining the whole question of nuclear war and its consequences). Thus, by the time the serious push from the Federal Government did occur (around 1961-62), the scientific community had enough experience with the problem to contribute to the discussions. I would just like you to know a little bit about this response of the scientific community, and also the response of the public.

The fallout issue had already sensitized the scientific community in the late 1950s because scientists could contribute to public discussions by virtue of the fact that it was a technical issue. It took a while, however, before the younger members fully understood that the problem was not so much Strontium-90 in the milk, but that fallout was really a symptom of a more basic problem, viz., an open-ended arms race with no relief in sight. One could only see disaster in the long run. Somehow this trend must be reversed. Well, there was some stirring in the scientific

community in America, relating to this, and it is interesting to note that there developed groups of scientists which began, by taking a stand on issues, but by organizing information movements. Thus they were more concerned with defining the problems clearly, than with providing doctrinaire answers. Of course, there were also people like Pauling and Teller, who did take strong positions

Civil defence, like fallout, is also a reflection of the arms race; similarly, it has a strong technical component. Thus there arose a number of groups which began analyzing and discussing the effects of nuclear weapons. The technical data certainly did not support the contention of the civil defence people that a fallout shelter program would automatically provide a substantial degree of protection.

Nevertheless, there came a period around 1961-62 where people were actually building shelters in their backyards. Then, within a very short period, almost overnight, the whole thing was killed by public opinion. It is instructive to note what it was that changed people's minds: It was what became known as the "shot gun" issue: A lot of people did not build shelters, in fact, the vast majority did not build shelters. The question that arose was, what happens following an attack if you have a shelter and your neighbor doesn't? Among the answers given by various people including one priest were those who said that a man has the right to protect his family, therefore he is perfectly justified in shooting down people who try to invade his shelter. This proved to be a little bit too much for the average American. Obviously the sense of values in our society was such that you couldn't go over that line. I think that this conflict in values killed the whole shelter business. Although the C.D. organizations continued, and although there was sufficient financial and governmental support the concept of civil defence became less and less attractive to the American public. Nevertheless during the period between 1961-62 the Federal Government continued setting the lead, encouraging local and state governments to set up and expand their civil defence programs. And most cities did what was expected of them in respect to setting up some units, building shelters, and so forth.

Somewhere around 1963, this trend too, reversed. There was a hurricane in Oregon, for example. Power lines

went down, transportation was interrupted, etc. The civil defence units proved to be incapable of coping effectively with the situation. Yet civil defence costs money. Thus, several cities decided to cut their budget allocations to civil defence. In Baltimore, for example, one man, just one man on the City Council asked what are we spending this money for? He scheduled a hearing. The scientists were called in on one side, and the civil defence people brought in a general and the Assistant Secretary of Defence for Civil Defence, and there was a big debate. The newspapers sided with the scientists. As a consequence, Baltimore, drastically cut its civil defence budget.

Recently (1965) there has been introduced a new dimension: serious considerations of an antiballistic missile program. I would like to point to two studies that are currently going on. One is "Project Harbour", which is more or less the product of a single individual, Eugene Wigner, Nobel Laureate in Physics, a brilliant man, an absolutely sincere man, who is terribly afraid that war with the communist block is inevitable. Wigner is also afraid that the United States would be very vulnerable to nuclear blackmail unless the U.S. has a strong civil defence program. Therefore he wants a blast shelter program, not just a fallout shelter type of program. He has proposed a grid work of connecting tunnels, running for miles underneath the cities, with many entrances and exits, into which one could put whole city populations in 15 minutes. He claims the expenditure would be around 20 billion dollars. Others feel that such a program would cost well above one hundred billion dollars, because of the need for air-conditioning and a lot of other problems.

The other study is less publicized, at the Hudson Institute. It is more traditional, but with increasing concern over long term post attack problems such as economic recovery. I think what is happening is that there are two new factors which favor the concept of civil defence which did not exist before. One of them is the advent of nuclear powers other than the Soviet Union. The purpose of a shelter program according to some, is not so much that it would do a great deal of good if the attack were from a major nuclear power, but in case it would be from a minor nuclear power, then the program might be significant. The second

factor is the possible advent of antiballistic missiles: If you are contemplating detonating nuclear weapons close to your own cities, in order to destroy incoming missiles then you'd better have your populations protected.

The disagreement concerning civil defence, as I see it, is as follows: The promoters of civil defence programs are convinced of its technical effectiveness. They feel this is particularly true in the kind of nuclear war in which only military targets would be attacked (counter force). Under such circumstances, population sectors would not be exposed to blast and fire, but would be exposed to fallout. On the other hand even if there was an attack on cities (counter city), but with antiballistic missile defences around the periphery, if the population is under cover, this will greatly reduce the number of casualties. Even if the cities are hit, the explosions would produce fewer casualties if the population down wind is under cover from fallout, and if the population away from ground zero is protected by blast shelters.

The anti-civil defence argument is essentially this: If you are dealing with a determined enemy it is relatively simple to alter the attack pattern so as to negate the efforts of the defence to protect its population. In fact, this is exactly what you are encouraging your opponent to do. For example, when the French built the Maginot Line, it caused the Germans to consider other alternatives, e.g., whether to go around it, or over it. They went through Belgium; but they had already devised other techniques for overcoming the Maginot Line, viz., parachute troops. The Maginot Line would not have restrained the German army; not for long anyway. Similarly one can begin devising techniques for counteracting any shelter program. One of the easiest ways is to simply increase the level of the attack. If that should prove to be the case, it would mean that although you might be saving more people during the initial phase, let's say during the first 48 hours or even two weeks, afterwards, because of the economic and social consequences about which we spoke in the first lecture, they become so much worse, that in the long run, the overall survival would actually be diminished, over a ten or twenty year period. Thus on a technological level, civil defence does not make sense.

The second other argument is more fundamental: civil defence is terribly negative; it constitutes but another round in the arms race. We ought to spend our money better and look to an international security system for genuine protection. All efforts spent on the arms race are immoral, instead we must create an international community in which nuclear war is an impossibility. The people who favor civil defence counter by saying that nuclear war is a real possibility, therefore not to take every step possible to protect a population from this event is clearly immoral. They argue that Civil Defence programs are not against peace, they are only being realistic.

Grayson: Monday 20/6 16/00

I have no prepared statement and unfortunately I didn't arrive in time to hear most of Dr. Stonier's remarks on which I'm supposed to comment.

I would say that the technical aspects of disarmament involve largely questions of inspections and control. Some of these have been discussed here. I am not quite so sanguine about national means of control although this depends too on the present technical state and more work is needed.

For instance, I don't know if Dr. Stonier mentioned work in the U.S. on Large Aperture Seismic Arrays (LASA) such as the one dedicated last fall at Billings, Montana. Even with a world-wide system of such arrays somewhat more sophisticated than present capabilities it is estimated that there would still be a very large number of unidentified seismic events. (I think Stonier already made the distinction between detection of a seismic event and its identification. Although explosions tend to be more symmetric, there is no unique identifying characteristic. One tries to identify as many events as possible as earthquakes, the remainder can not be identified by seismic means).

Depending on the number of such events each government has to decide whether the risk of clandestine testing is too great for the benefit derived from a test ban treaty. The role of technology is simply to define this number.

It has been estimated that the number of seismic events above magnitude four in the Soviet Union is about 250 each year. Of these, even with a worldwide LASA system only some 80% could be identified as earthquakes. That still leaves something like 45 which are not identified and that's rather a large number.

With improvements in seismic capability perhaps this number can be brought down. That is the hope, and the reason the U.S. and the rest of the world continue investigation of seismic methods.

Discussion:

Grayson: Well, the number mentioned is an estimate, based on a system which is not yet in existence. Experience on the number of low magnitude earthquakes is limited but I would say statistical fluctuations, as seen in larger earthquakes, would make this data of limited use. If you had 250 one year and 254 the next, you could not draw the conclusion there had been clandestine tests.

The standard deviation of the distributions, even if known in great detail, would still be large enough to have a considerable number that might have been tests.

Were you talking about the distribution in time, or space?

Grayson: That's a rather large order. First of all, I do not remember how many seismic events there are about magnitude four in the U.S.; natural or otherwise. There would probably be a similar number as in the USSR.

The world obviously thinks that the continuation of underground testing is not in the interest of peace; that it can possibly lead to a breakthrough which will change the military balance of power. That possibility is one of the main things that the extension of the test ban to underground testing is intended to stop.

I certainly cannot say what specific breakthroughs-- even if I knew-- but either they are to be feared and therefore a test ban is useful or they are not. The general judgement of all the governments represented in Geneva seems to be that there is something you would like to stop.

The number of underground tests I do not remember. I do remember that some of the delegations in Geneva mentioned the figure of more than 100 U.S. tests derived from reports in the U.S. press. I do not recall having seen any published USSR figures.

I merely say either continuation of underground testing is something to be feared or it is not. If it is not, then why do we bother with the extension of the test ban?

With reference to national systems, it seems to me an international system has virtue in that every country would want to be assured that the terms of any treaty were being observed.

I have no more comments but would say that there are many technical questions in disarmament but they are not at the center. They help define what the choices are, but the choices are political.

INSPECTION FOR DISARMAMENT

Abstract

Stonier Mon. June 20, 1966 16/00

1. It is not as difficult as is generally believed to determine whether a country is abiding by a disarmament agreement, or whether it is cheating. Existing intelligence agencies now serving their own nations have envolved many highly sophisticated techniques for gathering and evaluating information. Other government agencies, such as customs, police, and regulatory agencies also have accumulated a great body of experience which could easily be transferred from an intra to an inter-national level.

Direct inspection techniques: these would include, not only taking inventories of existing arms and stockpiles, and physical inspection of plants or other production sites, but also spot inspection of transportation facilities at key points (as custom officials do now).

Indirect techniques: these may be of greater importance, and could include: Fiscal inspection - the U.S. or U.S.S.R. could perhaps hide the costs of a five billion dollar project, but probably not of a twenty billion dollar project; the checking of critical components, e.g. guided missile system require extremely delicate components which can be manufactured in only a few places; raw material control - modern armaments require certain esoteric materials - it is possible to establish techniques for keeping track of them (the best example, of course, is the current practice on fissionable materials); scientific manpower registry - the U.S. went to great pains during World War II to hide the names of the nuclear physicists working on the Manhattan Project. Registries of technical personnel exist now and could be expanded. Technological tools - the modern technology of gathering information provides a broad basis for detecting any serious infraction of disarmament agreements. At present, satellities and high-flying planes take pictures from space, while highly sensitive radio, and acoustic probes monitor conversations on the ground; "bugging" devices are well-known. Perhaps most important is the use of computers to correlate the various types of information gathered, thereby detecting significant patterns.

Informants: the classic technique for obtaining secret information would continue to be an important technique, assuring continuing success of a disarmament treaty.

It should be made clear that nations already possess the techniques and organizations for carrying out inspection. This is particularly true of the intelligence agencies of the major and some of the intermediate powers.

2. While contemporary techniques make inspection for disarmament relatively easy, there are also aspects of contemporary technology which make it more difficult. As the drug control agencies are discovering, it has become increasingly simple for college students to manufacture psychodilic drugs in their home apartments. Similarly, any brewery laboratory has a significant biological warfare potential. It is conceivable that in not too distant future, a few individuals with sufficient specialized training would be capable of manufacturing primitive nuclear devices.
3. The critical component in any disarmament agreement is the climate of public opinion. Studies on clandestine arming or rearming (Germany post-World War I) indicate that either there is a very high motivation on the part of the group arming (e.g. the Israelis under British rule), or there is a very low motivation on the part of the group that is supposed to police the arms control (e.g. the Allied powers in the 1920's and 30's).

The degree of motivation of groups on the one hand to arm, or on the other, to assure continued disarmament, depends on the climate of public opinion. Thus during World War II, the U.S. could keep the secret of the atomic bomb from the Germans, but not from the Russians.

It is for this reason that the social pre-requisites to disarmament (discussed elsewhere) must be met before disarmament becomes workable. If the populations of the participating states are hostile and suspicious of each other, no lasting disarmament can take place. If on the other hand there is a sense of common community, then the idea of arming becomes repugnant -- to cheat becomes the act of madmen, and it would not be possible to conduct any clandestine operation without being immediately exposed by informants unsympathetic to the operation.

4. For this reason inspection for disarmament must be studied not only from the technological or technical, but also from the socio-political point of view.

Reference: Much of the above material is discussed in greater detail in:

Inspection for Disarmament

S. Melman, editor

Columbia University Press, New York

Mon. June 20, 1966 16/00 - Discussion

Stonier:

May I pick up just one aspect of what has been said and that is this question of trust and political aspects. Technically it is quite right. It is impossible to devise 100 per cent foolproof systems, and with biological weapons it becomes even more difficult. What I envision is this: that we are not going to get disarmament until we have reached a certain sense of world community. At that point most people would consider it criminal to be cheating in this area, including biological warfare. I can see a technician working in a laboratory simply going to the nearest U.N. headquarters or a newspaper to turn in such information. There is some support for this in the two cases that were studied on cheating in "Inspection for Disarmament"; at least the two that I remember - I haven't had a chance to look at it carefully - the Israeli experience and the German experience. In the Israeli experience you had one relatively small group but one of intense loyalty. The Israelis were able to perform the most amazing feats, creating a whole army camp with British uniforms and requisitioning all sorts of material from the British army. For months and months they trained thousands and thousands of people, and finally it was discovered only by accident. It is a beautiful example of how one can cheat if one is sufficiently highly motivated. The other example is Germany after World War I; after

after some years nobody seemed to care anymore whether Germany cheated and rearmed, except France, and after a while she did not seem to care either. The German air forces were built up by Holland and Sweden. And other countries contributed in other ways. It was very easy to cheat because of the social conditions of that time. I think there might be the key: that there may be an over-emphasis on the technical aspects, and that is useless to pin all one's hopes on technology except where such technology is related to the political climate. Such an example we find in the test ban. I think, the problem, as we all agree, is not all that technical; it's primarily political.

TECHNOLOGICAL ASPECTS OF WORLD SECURITY

B.T. Feld

It is commonplace to say that war has become so horrible that it is no longer possible to contemplate it; Yet it is being contemplated today, not only by the military, whose profession it is so to do, but also by the so-called "civilian strategists". And the more they contemplate war, the more possible war seems to become; and as the opportunities for manipulation of force for the achievement of political objectives become more apparent, so does the horror recede and the talk of megadeaths take on a kind of cocktail party unreality.

That wars should be regarded as intolerable is not new. This happened after every major war, but the horror slowly faded as the world picked up the pieces and proceeded to politics as usual. Although each revolutionary new military invention had led to the prediction that war had now become too horrible to contemplate, the world has always grown accustomed to the new horror and after a while has not known how to avert it.

The situation since the first atomic bombs were exploded differs from that of the past for quantitative rather than qualitative reasons. First, there is a new scale of destructiveness: A major city and its entire population can now be destroyed in minutes, rather than after long months of massive bombardment. Second, there is the now universal recognition by governments that science and technology are essential for the maintenance of military strength, so that the pace of military technology since the end of the war has remained essentially at the wartime level. Coupled with the general explosive growth of science in the last twenty years, this has meant that the time between radical new innovations in methods of mass destruction is now measured in a few brief years rather than generations. However, there is a new aspect to the situation, the beginning of a recognition -- though it has not yet penetrated to the furthest reaches of our governmental structures -- that the national security of all nations may be better served by restraints, by controls and by agreements to limit armaments and their use than by the race for the improvement of such weapons.

But arms races have a life of their own. They are not turned off by intellectual recognition of their futility. Nor is it simple to stop governmental activity in the weapons field once started. The time must be right, the political and psychological situation -- both internal and external -- must be favorable. Such favorable constellations of circumstances have not occurred very often in the past.

One such opportunity occurred at the end of World War II. At that time the American Government prepared a wise and far-sighted plan for the international control of such weapons, the so-called Acheson-Lilienthal plan. There are many reasons why this plan was never accepted, and not all of these have to do with the intransigence of the Russians.

Probably the main reason for the failure of these proposals as presented by Mr. Baruch was the fact that the Soviet Union, at the conclusion of the last war, was neither interested in nor ready for the freezing of the status quo with respect either to its armed strength or to the possibility for its further expansion. Stalin was not interested in any kind of agreement that would have prevented the Soviet Union from independently acquiring nuclear weapons. On the other hand, although the Acheson-Lilienthal proposals were both far-sighted and magnanimous, there was in their presentation a large element of hypocrisy -- of appearing to offer the moon in the full certainty that the offer could not possibly be accepted. Certainly, there was little excuse, beyond the immediate provocations of the cold war, for the cynical dragging on of the disarmament proceedings in the United Nations until well into the fifties, in which the Western Allies piously advocated a world nuclear government and the Soviet Union equally piously proposed a purely verbal "ban the bomb" agreement without either side having the slightest expectation of any progress. Aside from a missed opportunity, when it might have been possible to place some controls over the development of nuclear weapons before they had been produced in large number, or when some sort of agreement might have been reached to limit their numbers and types the net effect of the United Nations disarmament discussions of the late forties and early fifties was to develop among politicians and peoples the most profound cynicism concerning the intentions of the major powers regarding any possible limitation of their armaments.

An opportunity of a different kind, less spectacular but possibly as significant was missed in the early fifties when the hydrogen bomb was first achieved by the U.S., followed in about one year by the Soviet Union. At that time an important segment of American scientific opinion held that another initiative should be taken to halt the growing arms race and, by mutual and binding agreement with the Soviet Union, to limit the new development that was clearly and spectacularly on the horizon. The resulting internal struggle in the United States was not only lost by the scientists, but it ended in a vicious vendetta against their spokesman, J.R. Oppenheimer and flagrant intimidation against any independent scientific initiative. In this case, not only was an opportunity missed, but unreason, in the name of McCarthyism; prevailed instead.

Another missed opportunity for significant armament controls began with the launching of the first Soviet Sputnik. Unfortunately, following the initial Russian successes in the launching of satellites and owing to their obvious ability to use the same types of rockets to deliver nuclear weapons from great distances, the United States passed through a period of panic induced by the belief that our capabilities in the field of rocketry were lagging hopelessly behind those of the Russians. The scientific community was called upon for emergency aid (it was in this period that the President's Scientific Advisory Committee was activated) and a massive and rapid program of rocket development and missile construction was initiated to overcome the so-called "missile gap". As is now well known, this missile gap never existed to any appreciable degree and, in fact, now exists in the reverse sense -- American missile capabilities for long range delivery of nuclear weapons now exceed those of the Soviet Union by a large factor.

During the late fifties and early sixties, when the potentialities for ICBM development were being explored and understood, it became clear that such developments could provide a new opportunity for halting the arms race and for reducing nuclear armaments. The need for large numbers of nuclear weapons had previously been justified by the military, not because of the need to use large numbers in any

conceivable conflict, but rather because American and Soviet defensive developments, in particular anti aircraft defences, had become sufficiently effective so that a large number of bombers were required for even a few to be sure of penetrating these defences. However the same is not true of ICBM's, since there is no effective defence against these: therefore the number of missile weapons required for any possible military application is very much less than the number of bomber weapons required for the same application, most especially if the rockets themselves can be rendered invulnerable against an enemy attack.

This situation was clearly recognized by many scientists in the United States in the late fifties and a number of proposals were put forward for limiting such forces according to a doctrine now known as "minimum deterrence". Apparently Soviet military strategists understood these arguments much better than their American counterparts, for the Soviet Union has limited its missiles to a number sufficient to ensure that under all circumstances any American nuclear attack on the Soviet Union would result in unacceptable retaliatory damage to the United States. Probably, Russian acceptance of the concept of nuclear deterrence was made easier by the desire to economize on military expenditures. American affluence made such economic considerations less important and allowed us to assemble a nuclear force which is evidently a number of times larger than any conceivably needed to deter an enemy attack.

However, this opportunity for nuclear arms limitations is not completely gone, since even conservative military spokesmen recognize that both the U.S and the U.S.S.R. are now in a position to halt further procurement of missiles and even to get rid of some obsolete delivery systems, such as heavy bombers. Recently the American government has proposed a freeze on further missile procurement, as well as an agreement for both sides to destroy obsolete bombers. Although this proposal has been supported on the grounds that its effect would be to limit armaments to levels much lower than those that would be reached without such an agreement (thus constituting, in effect, a measure of disarmament) the freeze proposal has nevertheless been regarded by the Soviet Union and other nations as an attempt to maintain American nuclear superiority. Hence, it has not

been very enthusiastically received and, I believe, it will not have much chance of success unless the governments are willing to go a step further and reduce armaments to lower levels.

Nevertheless despite the lack of agreement on freezing or reducing missile stocks, the current missile situation has achieved a sort of quasi-stability, in which the number of American and Soviet ICBM's appear to be approaching a plateau. Although the present unbalanced situation cannot continue over a long period, there is a kind of short range stability arising from purely economic considerations and from the recognition of sufficiency. But even such temporary stability is likely to be destroyed by projected technological developments in both the US and the Soviet Union; that is, the development of anti-missile-missile systems. Should such systems be deployed, the number of existing missiles would soon be regarded as insufficient to ensure capability of retaliation against attack. But what is worse, even if such programs are only partially successful (that is to say, if it should be possible to develop a system that would shoot down a certain fraction of all attacking missiles), as long as work on such systems goes on and as long neither side is fully cognizant of the status of such work on the other side, the tendency will be to assume the worst and to build many more missiles than are needed. Thus, just as soon as any significant progress is apparent towards the development of an antimissile-missile, the armaments race will start off again and current stockpiles of missiles will be greatly increased.

Unfortunately, all attempts to convince the Soviet Union that it would be to our mutual advantage to forego the deployment of an ABM system have fallen upon deaf ears. In part, I suppose, the incentives which we have offered have not been sufficient; in part, we are up against a very profound aspect of Russian military psychology, which has always emphasized the defence and which therefore finds it extremely difficult to conceive of and to agree on a plan in which the deliberate suppression of purely defensive measures is required. Still, it would appear to be to our mutual advantage at least to agree on a moratorium on ABM deployment at this time.

Clearly, any diminution or reversal of the arms race will require much more than just all government refraining from inflaming it -- it will require agreements for the limitation and eventual reduction of armaments and of weapons systems.

It is obviously not possible to predict in detail how future scientific and technological developments will change the character of the arms race. However, it does not take a great deal of foresight to observe that in at least one field that of biology and biochemistry, the probabilities of the development of new weapons of mass destruction are very frightening indeed. Biological and chemical weapons have until now, been relatively ineffective and, are therefore seldom used in combat. But, considering the revolutionary developments which have taken place in this field, in this last decade, it is clearly unrealistic to expect that this situation will remain static. Most especially the pace of biological and chemical weapons development programs; the field has, fortunately, until now, remained mainly in the hands of second rate technologists.

The fields of biological and chemical warfare offer a striking example of an aspect of the arms race in which restraint and self control exercised by the major nations at this time, would be profoundly in their self interest. Such weapons if and when developed, will be relatively cheap as compared to nuclear weapons and will therefore be of extreme interest to small countries with limited resources and aggressive intent. However, at this time, the most effective development programs in these fields are being carried out by the major powers. When successful, the main effect of such developments will be to provide new and cheap weapons possibilities to many small countries although, at the same time, there will be no improvement in the relative positions of the major powers. In this circumstance, the only obstacle preventing the major powers from mutual agreement not to develop such weapons would seem to be a stubborn nonrecognition of self interest, or else a short-sighted politically-induced inability to talk sense to each other on matters of common concern.

Finally, perhaps the most important aspect of the nuclear arms race, which might have been controlled at any time during the past decade, but which is now rapidly approaching the point of no-return, concerns the spreading of nuclear weapons to other countries. For many years, only three nations possessed nuclear weapons. Then France joined the club; and now China. Quite clearly, each addition to the list of nations possessing nuclear weapons increases the incentives of and the pressures upon non-nuclear nations to reconsider their positions. We are now witnessing a heated internal debate in India, in which the forces of restraint have only barely and temporarily managed to remain in control. Similar debates are going on in countries like Sweden, Switzerland, Japan, the United Arab Republic, Israel, etc. Once the dam breaks it will be impossible to contain the flood. The question is how to convince those non-nuclear nations that are capable of producing nuclear weapons, that they should continue in their present course of restraint.

A number of suggested agreements have been proposed to prevent or at least impede further proliferation of nuclear weapons. The present partial test ban is one such measure, insofar as it is difficult for participating nations to develop nuclear weapons. It does not prevent this, however, as long as tests are permitted underground. Extension of the test ban to include underground testing would be a major advance. Other proposals include for example, an agreement among the nuclear powers not to give nuclear weapons, or the materials or information required for their construction, to nations not yet possessing them, and for the non-nuclear nations to agree not to make weapons or to obtain weapons, materials or information. There is no reason why such an agreement among the nuclear powers could not be signed today, at least by the three major nuclear powers, if the political atmosphere were more favorable.

As for the agreement among non-nuclear nations, this would be easier to achieve if these nations were provided with guarantees by the major nuclear powers, preferably through the United Nations, against the possibility that lack of nuclear weapons would jeopardize their national

security or leave them open to nuclear attack or to black mail resulting from the threat thereof. There has been the suggestion that such guarantees might take the form of assurance from the nuclear powers that a nuclear attack on the non nuclear nation would be followed by immediate retaliation in kind. However, there are very great political difficulties in providing such guarantees, most especially in view of the current Sino-Soviet difficulties. Perhaps, the most effective guarantee at this time would be an agreement on the part of all the nuclear powers that they would not use nuclear weapons against any nation not possessing them.

Other measures could be and should be undertaken to impede the spread of nuclear weapons; for example, the universal application of the controls over nuclear materials now in effect for projects under the International Atomic Energy Agency. At present, there are many purely national programs, in addition to a large number of programs resulting from bilateral agreements, as well as regional arrangements such as Euratom for the peaceful exploitation of nuclear energy. Although the United States has announced that it will put its future bilateral agreements under the same inspection system as is used in IAEA, this procedure now covers only a small fraction of present day nuclear energy development programs. As a result we are now rapidly approaching a situation where many nations, through perfectly legitimate nuclear energy programs, will soon have a sufficient accumulation of fissionable materials and capabilities to be able to embark on independent nuclear weapons programs.

Clearly the adoption of all such controls, and their acceptance by the non-nuclear nations, will be possible only once these nations have agreed to forego independent nuclear weapons development. Equally clearly, in the present atmosphere such a resignation of potential nuclear status would only be possible if the major powers would demonstrate to the non-nuclear nations by adoption of effective arms limitation measures that they are willing to exhibit restraint on their own development and use of nuclear weapons.

The key lies in the word "restraint". In a world in which naked power is admired, and in which the recognition of status flows from the exhibition of and willingness to use such power, it is not likely that nations capable of achieving nuclear weapons would voluntarily forego this possibility. It is not obvious that, in the present political context, either the United States or the Soviet Union is capable of showing sufficient or recognition of self- and mutual- interest to provide the needed guarantees and incentives to other nations to convince them to restrain themselves. On the other hand, the stakes are exceedingly high -- imagine a world in which most nations possess nuclear weapons and their means of delivery -- and the incentives to the nuclear powers are also great.

The problem is whether we can recognize these stakes and incentives clearly enough to make the necessary political moves, and to forego the wrong political moves, in order to bring a halt to the arms race before it runs completely out of hand; whether we can start to limit arms and to control the uses of force in order to establish the stable world order that will avoid the otherwise inevitable catastrophe.

APPENDIX

"The Big Blackout: Unwitting Rehearsal for Nuclear War"

by Tom Stonier

During the power failure in the Northeast many people thought of a nuclear attack or sabotage. A more serious possibility, this expert suggests, would have been a nuclear accident!

WAR/PEACE REPORT

(January, 1966)

At 5:16 o'clock on the evening of November 9, 1965, the electric clocks in Toronto, Canada stopped. Eleven minutes later, in New York, radio stations went off the air as planes flying over the area watched most of the Northeast disappear into darkness. "Another Pearl Harbor", flashed through the mind of an American Airlines pilot approaching New York, while below, a chain reaction of uncontrolled power surged back and forth through the giant CANUSE electric grid tripping relays and shutting down generators. From Toronto to New York, from Boston to Lake Erie, over 25 million people were plunged into darkness, the victims of technological failure.

Although the blackout itself proved less calamitous than some other natural disasters to which our society is regularly exposed - such as hurricanes- the nature of the event caused many people to wonder, particularly as the scope of the failure became apparent, whether this blackout was not caused by a nuclear attack, or at least by some diabolical scheme of sabotage was recognized both in newspaper headlines and in the fact that President Johnson ordered the F.B.I. to help the Federal Power Commission in its investigations.

However, the suspicion that the blackout might have been caused by a nuclear attack was quickly dismissed since present American relations with those countries capable of a nuclear strike on the U.S. made this improbable. Furthermore, the lack of other threatening events allayed the fears of the victims of the power failure. Probably most important of all, some radio stations were able to go back on the air rapidly with

emergency power, making it possible for word to spread quickly beginning with car and transistor radios as to what the situation actually was.

The possibility that the blackout might have been caused by a nuclear accident seems not to have been considered seriously at all. And yet this is precisely the possibility on which a concerned citizenry should focus its sober attention.

AN ABSURD IDEA

The idea that a small, secondary backup relay in Canada could cause a power failure from Toronto to New York seemed too absurd to discuss seriously. No electrical engineer considered that a power failure of that magnitude was possible. Were not the systems protected by relays which would cut out improperly functioning areas? In fact, the industry was so totally unprepared for this type of failure that in many cases there was no independent generating capacity, which was needed to restart generators after the breakdown. In Queens, a generator burned out because there wasn't enough electricity to run the oil pumps supplying the generator. In the light of this actuality, it is interesting to note the report of the Federal Power Commission of October, 1964, entitled Defence Implications of the National Power Survey, which studied the effects of possible thermonuclear attacks on the existing power system: "It was concluded that while some localities would be cut off from surviving generating facilities due to damaged transmission lines, practically all the study area could be supplied with power in adequate amounts after these simulated attacks."

Electricity is to our society what blood is to our bodies: A failure to supply adequate amounts of either results in paralysis. That there should have been such miscalculation on the part of the experts concerned, raises the specter of another kind of technological mishap: the accidental discharge of a nuclear weapon. Except for the technicians and military personnel directly

involved, almost every one forgets that we live in a world in which strategic Air Command bombers carry live nuclear bombs overhead, while under the oceans cruise submarines armed with nuclear Polaris missiles. Ballistic missiles scattered around the globe complete the American arsenal of thermonuclear weapons systems designed to go off at a moment's notice. And the U.S. is not the only nuclear power now; the number is increasing every year. Furthermore, the pressure is on to expand in other directions - to put nuclear weapons into space, and to build more "tactical" weapons for the ground.

The only way to make nuclear weapons absolutely safe is to disassemble them. But from a military point of view disassembled weapons would be useless. And there in lies a dilemma: Is it humanly possible to design thermonuclear weapons systems which detonate when desired at a moment's notice, but only when desired? The answer is probably negative, and if that is true the question that should be asked is not will a nuclear device explode accidentally, but when?

There are other implications of the power failure which are worthy of examination. Firstly, the failure illustrates the difference between what could be done in any given situation, and what actually is done, a consideration generally overlooked by civil defense planners. Secondly, there is the dramatic reminder provided by the blackout itself, of how dependent our society is on electric power. And thirdly, we might consider how very vulnerable to nuclear attack our power system really is.

The shortcomings of the power industry have already been discussed. Now that an army of investigators, legislators and others have looked into the power failure, a host of new legislative measures will force the industry to adopt new measures and to invest in new equipment—actions that it could, and should, have taken earlier. However, even in the absence of such equipment, the most severe suffering from the failure - in New York City and adjacent areas serviced by Con Edison - could have been prevented by fast action. The Federal Power Commission report pointed out that there "was a period of some seven minutes to 12 minutes between the initial disturbance at 5:16 p.m. and the time when the service to.....

southern New York finally collapsed". The report states further that "a timely shedding of the load in some sections of New York might have avoided a citywide blackout. . . But whether because of lack of clarity in the control room instrumentation or for other reasons, the systems operator did not make an immediate clear-cut decision in this emergency". In fairness it should be stated that the engineer involved had been attempting to ascertain the nature of the problem and had decided, on the basis of his information, to cut clear of the system to the north. He was actually in the process of pushing the buttons when the Con Edison system itself failed. So it was possible to prevent New York City from blacking out.

AT PEAK HOUR

But, of course, New York City did black out. The power failure hit the city at the peak of its evening rush hour. Trains and subways stopped, and an estimated 800,000 people were caught in the latter. Thousands were trapped in elevators. The loss of traffic lights aggravated the normal rush hour traffic jams and the tunnels had to be closed since it was not possible to maintain proper ventilation. Air traffic was crippled because lights marking the runways went out. New York bound planes were rerouted to airports as far away as Washington and Montreal. Perhaps most trying was the fate of the some 2,000 persons stuck in the four BMT subway trains that stalled on the bridges crossing the East River.

Even those at home suddenly became conscious of their great dependence on electricity when not only lights but also furnaces and water heaters shut off (because the thermostats and other electric controls would not function) refrigerators and freezers stopped cooling, and, in many homes, electric stoves and water pumps failed.

Among those least affected were motorists driving on the open highways. Automobiles, those self-contained power units, supplied themselves with enough electricity to light their headlights, provide heat, and run the radios. Only those who ran out of gas were out of luck, for the gasoline pumps could not operate without electricity.

The loss of electric power for a single night produced no disaster. The night was cool but not icy. Vehicular traffic, particularly busses, remained operative. Police and auxiliary personnel were able to maintain order among a cooperative citizenry. For the majority of people involved, the power failure was more an adventure than a threat. No panic developed. Instead a holiday mood gripped the crowds walking along the moonlit streets. Most made it home. Before they awoke the next morning, the heat was back on. Very, very few were in serious danger that night considering the many millions of people affected.

If the massive blackout did not produce any serious social disruption (although economic losses were estimated at \$100 million in the metropolitan area alone) it should be recognized that there were various mitigating circumstances. Among the most important was the weather. Consider the consequences if the blackout had occurred in New York City during sub-zero weather; some people would have frozen to death. Or if instead of a brilliant full moon in a clear sky, it had been raining or snowing, there would have been many more accidents.

Another mitigating circumstance was the lack of international tension between nuclear powers: Would no panic have developed if the blackout had occurred during the height of the Cuban missile crisis?

Had the power failure been caused by the accidental detonation of a nuclear weapon (either American or Russian) near the Niagara power station, the blackout would have been greatly complicated by the presence of fallout drifting eastward from the explosion. (Among the possible ways in which this might occur: a Soviet missile targeted on the Niagara station might be sent on its way unintentionally, or a U.S. bomb might accidentally be dropped from an airplane. On one occasion a nuclear bomb actually was dropped by accident from an airplane over North Carolina, although this fortunately did not result in a nuclear detonation.)

Even though the New York metropolitan area might not have been in the path of the fallout from an accidental explosion, it is reasonable to conjecture that panic would have ensued from the mere knowledge that a cloud

of lethal radioactive dust was moving across the North east somewhere. On the basis of past disasters, it is likely that such panic would have manifested itself primarily in one of three ways: Husbands and wives caught at work, and particularly mothers and fathers of young children, would frantically attempt to become reunited with their families. Husbands, and particularly fathers of families that were united (or reunited), would tend to forego their other social duties to remain with and protect their families. (This would mean that many a Con Edison repair crew would never materialize.) Thirdly, a significant portion of the population might attempt to flee south, away from the direction of the anticipated fallout. Flight might also be away from the city itself on the theory that the first blast was but a prelude, and that soon a general conflagration would engulf New York.

HEAT COULD FAIL

For this reason, even in the absence of any direct physical threat to the city, it might well have happened that power would not have been restored for days instead of hours. In that case, there would have been no heat the next morning, nor that day, nor the days and nights that followed. Those with gas stoves in the kitchen, or fireplaces in the living room might have survived all right. But it seems almost certain there would have been an increase in mortality among infants, the aged and the ill.

Note that we have not considered that the fallout might actually descend upon New York itself, forcing families away from their kitchen stoves into basements, or in apartment houses, into the inner hallways (all unheated), and in general bringing to a complete halt all relief and repair activities. Nor have we considered the possibility that the accidental explosion of a nuclear weapon might trigger a nuclear war. This might be most likely if the accident occurred during an international crisis.

Should such a nuclear war ensue, electric power would be knocked out not only directly by the physical destruction of power plants, substations and transmission facilities. Power would also be disrupted indirectly many

miles away from the blast because the interconnection of various systems into one giant gridwork requires, as we dramatically learned on November 9th, very delicate phasing that would be disrupted by the destruction of the various facilities that are tied into the grid. In addition, the phasing might be disrupted by surges of power produced by the large bursts of electromagnetic radiation emitted by nuclear explosions. After the initial attack, it would become extremely difficult to repair the malfunctioning system because of the inability of repair crews to move around in the fallout fields. To aggravate the situation, the longer equipment remains inoperative, the more likely is it to suffer further deterioration.

A DOWNWARD SPIRAL

Even power stations untouched by blast, heat or fallout might remain inoperative indefinitely because the economic and social chaos following a nuclear war would prevent these stations from being supplied with fuel or spare parts. Toward the end of World War II the German economy was made largely helpless by the breakdown of the transportation system, illustrating the fact that a modern society is a delicately interconnected complex of resources and activities, and that failure in several critical areas can lead to a total collapse. There came a point in the spring of 1945 when the German economy had been stressed beyond a certain critical level. It collapsed. Similarly, the CANUSE power grid was stressed on November 9th to a point where it collapsed. Both for the German economy to function again, and for the Con Edison generators to start up, an outside source of financial or electrical energy was required. In the absence of such outside aid, an irreversible downward spiral could result.

Of course, the very idea of an accidental nuclear explosion and its consequences looks like such a remote possibility that it hardly seems worthy of serious consideration. But then, so did the blackout.

OPENING ADDRESS

Edoardo Amaldi

Ladies and Gentlemen,

in opening the International Summer School on Disarmament and Arms Control, I want to welcome, on behalf of the Organizing Committee of the School, all friends and colleagues already present here, and those who will arrive in the course of the day, either for giving lectures or for listening to them and taking part in our discussions.

I also want to express our thanks for his participation to this opening meeting On.le Zagari, Undersecretary at the Ministry of Foreign Affairs. His presence is clear proof of the interest that the Italian Government reserves to the problem of disarmament.

As it is well known, the Pugwash Movement has its roots in the "Manifesto" signed by Bertrand Russell, Albert Einstein and nine other scientists, that was published in London in July 1955. The response to the "Russel-Einstein Appeal", as it was called later, was enthusiastic; hundreds of letters and cables, from individuals and groups, came pouring in from all over the world, expressing approval and offering help. In the "Manifesto" the dangerous situation resulting from the development of nuclear weapons was clearly evaluated and underlined, and scientists from all countries and all political creeds were prompted to urge the governments "to realize and to acknowledge publicly that their purposes cannot be furthered by a world war", and consequently they "should find peaceful means for the settlement of all matters of dispute between them".

The first conference, with the participation of about thirty scientists from different countries, took place, during the summer of 1957, in Pugwash Canada. Since then, the Pugwash Movement has organized fourteen other international conferences, of different sizes according to the different cases, which took place in seven different countries: USA, USSR, UK, Canada, Czechoslovakia, Ethiopia, India, Italy and Yugoslavia.

Those who have taken part in Pugwash conferences will certainly remember the enthusiasm of the first meetings and the remarkable fertility of ideas and factual proposals raised by various parts and developed in common, although sometimes these ideas and proposals were not very close to the political situa-

tion existing at that time. Today many of these ideas have been generally accepted and partially applied at the political level, testifying to the great usefulness of the Pugwash Conferences.

It should, however, be recognized that the initial impact of Pugwash has lost today part of its original strength with regard to the specific problem of disarmament.

Our more recent conferences have been often devoted, at least in part, to more general problems such as the international scientific collaboration and the help to developing countries. I believe that this widening in the field of interests of the Pugwash Conferences, is, at the same time a result and a cause of the diminished incisiveness of the disarmament problems in the international scientific community, in spite of the fact that today, we are still very far from having reached the original goal, e.g., the general and complete disarmament; on the contrary, the new danger represented by the atomic proliferation, further obscures the future of mankind.

In March of this year the only international review on Disarmament and Arms Control stopped its publication, and its Editor, Wayland Young, commented the situation as follows: "There is only a limited number of conceptual frameworks within which these problems can be tackled, and only a limited number of concrete measures which can be suggested to governments. These frameworks and these measures have now been fully described and discussed, in this journal and elsewhere. Unless and until the governments of the world, which means in effect the governments of the two super-powers, begin to put these measures into effect there will be no point in devising new ones, or in seeking new conceptual frameworks. Ideas are not among the commodities which can be stockpiled; they have to be consumed before any skilled producer will make more. The only possible consumers of ideas in this case are the governments of the super-powers".

In other words, while the success of the early Pugwash Conferences, was bound to the overwhelming participation of scientists and to the urgent need of raising and developing ideas and proposals of technical nature, today the political and sociological aspects of disarmament problems have become of primary importance.

The recognition of this new situation has brought many of us to believe that the complex problems of disarmament and

arms control should be tackled by the Pugwash Movement, not only by means of Conferences of the traditional type, but also in more systematic forms and in wider circles, so that the contacts at high level that are made possible, once or twice a year, by the Conferences, may be adequately nurtured and advanced.

These views bring as a consequence the need for the Pugwash Movement to organize, besides the Conferences, other means of studying disarmament and of spreading their results so that wider layers of the public opinion can become aware of the real nature of the problems and of the urgency to find adequate solutions.

Particularly important from this point of view appears to be the spreading of information in the political spheres of countries not directly involved in the construction of nuclear weapons, since the governments of these countries can certainly have a great influence in the research and adoption of solutions of particular as well as of general problems connected with disarmament and arms control.

The urgency of such a work of spreading information is clearly proved by the fallacy of arguments based, for example, on national prestige, that are raised here and there, from time to time, even by people entrusted with great responsibilities. These arguments, in fact, are only a sign of the scarce knowledge of the real meaning of an atomic conflict.

The idea was first suggested by Prof. C. Schaerf during the 26th Course of the International Summer Physics School in Varenna, that took place in summer 1962. On that occasion Schaerf talked to me of the possibility of organizing a course in some way similar to those organized by the Italian Physical Society on specific topics of high scientific interest, with the difference that it should be devoted to problems of disarmament, with special regard to atomic disarmament.

This idea was discussed on the occasion of a few meetings of the Italian Pugwash Group, until, in Spring 1965, it started to take concrete form, also because we had received in the meantime from various bodies some assurance about the possibility of receiving financial support.

In consideration of the novelty of this initiative you will permit me to add a few general remarks.

The first one is that this school has an interdisciplinary structure, just for the reasons that I stated before, while the Pugwash Conferences were characterized by the fact that almost all participants were scientists active in the fields of physics and biology, the program of the International Summer School covers a very wide range of competences as can be recognized by the qualification of the lecturers and the subject on which they will speak.

Stonier, professor of Biology at Manhattan College, New York, will treat the effects of nuclear explosions while Lapter, professor of International Relations at the Warsaw University, will discuss various items among which I wish to recall: the role of smaller countries in disarmament and the proliferation of nuclear weapons in Europe. Arangio Ruiz, professor of International Law at the University of Padua, will discuss: disarmament and international law, while Feld, professor of Physics at M.I.T. (USA), will treat the problem of inspection and controls.

Bjornerstedt of the Research Institute of National Defense in Stockholm will tackle "Armaments and Strategy" and Röling, professor of International Law at the University of Groningen and General Secretary of IPRA, will discuss various sociological problems connected with peace research; Markovic, professor of Physics of the University of Belgrade will discuss ideological and peaceful coexistence and Sylos Labini from Rome will treat the economic aspects of disarmament.

Unfortunately I did not, until now, get any answer from Russian colleagues to whom I started to write in November 1965; I have, however, still some hope that they can arrive in time to take part in our work.

Besides all these lecturers with specific professional competence on the corresponding subject, who bring to the School their personal contribution or, at most the contribution of relatively restricted groups of collaborators and pupils, a few people have been invited, who are officially involved in the disarmament problem.

Among them I should mention Mr. Epstein, Chief of the Disarmament Affairs Division of the United Nations in New York, and Ambassador Cavalletti, Head of the Italian Delegation to the Conference on Disarmament at Geneva. We have also invited the Heads of the Delegations of USA and USSR to the Geneva Conference to give a lecture on the corresponding official points of view.

We have not as yet received an answer, but we hope that Ambassador Cavalletti will be able to convince both of them to accept our invitation. If this will be the case, we expect lively discussions from many participants, in particular from those belonging to the non-aligned countries, in connection with the presentation of the official points of view.

The interdisciplinary nature of the School appears very clearly also from the type of people that have applied and have been admitted to follow the course.

They are 37 from 13 different countries and are classified as follows according to their professional competence: 12 have studied physics, 2 engineering, 1 medicine, 5 law, 4 political sciences, and the remaining 13, various faculties ranging from pedagogy to sociology and from philosophy to history.

A second and last remark that I would like to present briefly in this opening meeting, is the experimental character of the School. From this first attempt the Italian Pugwash Group hopes to succeed in establishing if, and how much, this type of initiative can help in the continuation and development of the dialogue among the various countries, in particular among the nuclear powers. This dialogue appears to be the only way open that should be followed to its end, if one has a real desire of avoiding nuclear conflicts, which almost certainly would be catastrophic as can be recognized on the basis of the two well-known arguments.

The first one is that once nuclear conflict had been started only with great difficulty it could be maintained inside more or less restricted limits; the second argument is that a nuclear conflict, even regional in the geographical as well as in the political terminology of the word, would constitute an extremely grave proof of the incapacity of the human specie to come to an agreement on such a vital problem, which certainly, on a purely rational basis, can have various solutions acceptable and highly desirable by an overwhelming fraction of the inhabitants of this small and now almost too narrow planet.

This morning, after my words of welcome and acknowledgment, Prof. Stonier will give his first lecture. After the lecture the meeting will be closed and after an intermission of half an hour, all those who committed themselves to lecture at the School are kindly asked to meet again in this same room in order to establish the details of the program so that it can be distributed in the early part of the afternoon. Today at 4p.m.

the second lecture of the course will take place; the speaker and the title of the lecture will be established during the meeting of the lecturers later this morning.

Before asking Prof. Stonier to give his lecture I would like, as Director of the School, to express the warmest thanks to all those that, in one form or another, have contributed to the realization of this initiative.

First of all, I should like to acknowledge the support of the various Members of the Organizing Committee: On.le F.M. Malfatti, Undersecretary at the Ministry of Trade and Industry; On.le M. Zagari, Undersecretary of the Foreign Office; Professor A. Buzzati-Traverso, Biologist and President of the Italian Pugwash Group; and the colleagues C.A. Jemolo, professor of Law; Guido Calogero, professor of Philosophy; Paolo Sylos-Labini professor of Political Economy. I also wish to thank, for external support and for useful advice, the following people: Dr. Fulci at the Secretarial Office of On.le Zagari; Drs. Beheman and Borin of the Cabinet of On. Nenni; Mrs. Paronetto Valier of the Italian Commission of UNESCO; Mr. Forchart of UNESCO in Paris; and Professor C.D'Elia, Director of the Didactic Centers since he has helped us at the Ministry of Public Education, in having Villa Falconieri at the disposal of the School during these two weeks.

I also want to thank, for internal help, Prof. Lucio Mezzetti, Secretary (until recently) of the Italian Pugwash Group, since in his capacity of Director of the Frascati National Laboratories of CNEN, he has been generous with various advice and help; Professors Bruno Bertotti, Francesco Calogero and Carlo Castagnoli who have acted as advisors on various organizational problems, and Drs. A.DeGasperi and R. Scrimaglio for having devoted a few hours a day for a few months, for the preparation and actualization of all practical details; Dr. G. Botta of the Press Office of CNEN, for having solved those problems of the School which enter in his professional competence, Miss Corradi Pizzi for having organized here at Villa Falconieri a small library of publications referring to disarmament problems, and Dr. S. Bozzo of the Frascati National Laboratories for secretarial work made with extraordinary ability and personal sacrifice.

Finally, Prof. Carlo Schaerf deserves a particularly warm thanks, not only for his spirit of initiative, but also for his remarkable endurance in keeping things going from the beginning. I think that one should recognize in the most explicit way that

without the energy of Schaerf the School would not have materialized.

Finally, I want to express, on behalf of the Organizing Committee, our warmest thanks to the Bodies that have provided the financial support, namely:

- to the Carnegie Endowment for International Peace, and particularly to Mr. Goormaghtigh and Mr. Siotis;
- to the Presidency of the Cabinet Council and in particular, Ambassador Pompei.
- to the General Direction for Cultural relations of the Italian Foreign Office, and in particular to the On. Zagari and Dr. Fulci;
- to the Organizing Committee of the 14th Pugwash Conference held in Venice in April 1965, and in particular to its President, Prof. G. Bernardini.

Concluding my welcome and acknowledgment speech, I also want to express our thanks to our host, Prof. G. Gozzer, Director of Villa Falconieri, who will now say a few words to you before we hear the lecture by Prof. Stonier.

Some discussion following Stonier: "Social Prerequisites
in Disarmament"

Thurs. 23/6 11/30

1. (Stonier's comments only)

Aggressive behavior in animals is often ritualized in such a way as to minimize damage. For example, in a fight between wolves, when one wolf bares his throat, the fight is over; it means that he has surrendered: he is exposing his vital part, and the opponent is completely inhibited from attacking. The question is: Is there some such human equivalent. I don't think it has ever been clearly established whether there is such biological ritualization in man, although Konrad Lorenz and others believe that there may be the same instincts operating in humans. Thus in combat, when the opponent surrenders, you don't kill him. At least in individual hand to hand combat. Lorenz makes the point that the problem with modern warfare is that one generally does not see the people you are killing and that has perverted the whole business. One can no longer rely on instinct.

Irrespective of whether the above is true, the problem is, I think, basically cultural. That is, we have to move ritualization of group aggression up to the next level. Currently we can engage in anything from a soccer match to atomic warfare. Lorenz himself strongly favors the soccer matches. But, you know, in a way even international soccer matches are bad, for the reason indicated in the boys' camp study: competitive sports aggravate hostilities. The thing that brought the boys together overnight - I didn't tell you, and perhaps it would be an important thing - the camp director went out one night and shut off the water supply and there was suddenly an emergency, and they said: "We've got to do something about this emergency"; and they made up work teams of mixed A and B groups, and one group was sent to town to inform the police; and another was sent to a farm to get some water; and groups were sent out to see if they could track down the pipeline and others, to see if they could find the fault; and everybody was busy and there was a great excitement in the middle of the night. Next day the attitudes had shifted completely: "Gee, those guys in the A team aren't so bad once you get to know them"!

Obviously a common emergency has a strong uniting effect, and can immediately reduce intergroup hostility. It has been said, that if it should be discovered that flying saucers are real indeed, and that they have been sent by Mars, our differences with the Chinese would disappear over night! Of course that doesn't comfort me--to move out into interplanetary warfare...

I think that any cooperative efforts, like cooperation in space exploration would be immensely helpful in reducing tension between the U.S. and the U.S.S.R. There the common enemy would be the hostile environment of space. I think IGY the International Geophysical Year, was a necessary social prerequisite to the Antarctica Treaty which was the first significant treaty between the United States and the Soviet Union since the Austrian Peace Treaty. Therefore I think that ritualization at the biological level is not as important as one might think: In general man's aggressive drive tends to be at an individual level whereas I think wars tend to be at a social level. We inherit aggressive drives, but we can ritualize them culturally: We have all kinds of outlets for hostility, from aggressive driving to excessive politeness, which I don't know how it is here in Italy, but in America, the vehement insistence that the other person goes ahead of you through the door sometimes is obviously an act of sheer hostility! The important thing is that we create new social institutions which will enable us to channel group aggression into less lethal forms. Perhaps Niezing will have some comments on this train of thought. We have no psychologist at this meeting, do we?

2. In America I think the hope for the peace movement does lie with the women. I don't know how it is in other countries. I suspect in England it is too. In America I think that women have more leisure and are subject to less pressure. Pressure both in economic and social terms.

Unfortunately in the United States we have certain attitudes which are very bad as far as the peace movement is concerned. One is that someone seriously interested in peace is either a little draft, or he is a Communist. The common attitude is that the people who have been pushing hardest for peace are the Communists, therefore if you are

pushing for peace, then you must be either a Communist, or a fellow traveller, or a dupe of the Communists. Fortunately this attitude is beginning to disappear somewhat because of the relaxation of tension between East and West. However, the good judgement of someone seriously interested in peace is still questioned, for example, I was very reluctant to say that I was coming to Frascati to talk about disarmament unless I could explain my reasons to the person, and then usually it was all right. But frequently I have had a sceptical reaction. In one case, it happened to be a Hungarian refugee, I had to talk to him for three hours!

Because of these attitudes, if a man is active in a peace movement, and it becomes known, he comes under suspicion, and that can affect his chances for promotion. His boss wonders if the man is making such a mistake in judgement here, maybe he also makes mistakes of judgement in his job. And this is not unreasonable, given the social attitudes and values we have in the United States today.

A woman, on the other hand, is generally not subjected to such economic pressures. She may however, be subjected to these social pressures although not as much as a man because I have encountered the following phenomenon in the United States: With minor exceptions, when I talked about the effects of nuclear weapons, there was a very distinct sex difference in the sort of questions I would get. There are always exceptions, but in general it was my impression that men tended to ask only technical questions; whereas women frequently tended to ask moral questions. When I described, let us say, the accident associated with the test of the first thermonuclear weapon, the Bravo shot of March 1, 1954, which contaminated not only the American fleet trying to get out from under the radioactive cloud, but also the Marshall Islands 120 miles to the East, men might very often ask specific technical questions such as, what were the effects of the fallout radiation on plants, while the women would say: Did we have the right to contaminate the Marshall Islands? The Marshall Islanders have no quarrel with either us or the Communists. They are not a part of the quarrel.

In contrast, if a man got up and asked a moral question, some of the audience tended to project a feeling that

he must be some sort of an eccentric. Again, it is the prevailing mores that govern these attitudes about what men and women are expected to say, and, the women are much more flexible; they can stand up and say: "Look, fallout is immoral, it is wrong, the arms race is all wrong"; whereas the men would consider such questions naive and would have to hide behind technical things, (and perhaps this is even more true for scientists).

Szent-Gyorgyi, the Nobel Prize winner in physiology, gave a very nice speech about how he thought the hope was with the women, because they have the time, they have the independence, and they have the interest in the next generation. He felt very strongly about this. And I feel that without the mass of support of the women, in the Western countries - I don't know about elsewhere, but certainly in the western countries, and maybe I should restrict this even more, because I don't know about the role of women in Italy, for example - but in the United States, Canada, England and perhaps some other countries of the West, without the massive support of the women, the peace movement would never get anywhere. This is my answer to question No.1.

No. 2: in terms of splitting groups, I can only say this: I think it is inevitable at this stage of the evolution of the peace movement, that there should be many diverse groups. I have been on enough committees to know that people join volunteer groups, for many, many reasons, not only because they are interested in peace. They may involve prestige in the community; they may involve a personal outlet for energy; they may involve the quest for friends; there are all kinds of reasons. And, as long as you have these, you will have groups that compete with each other. And I don't think it is necessarily bad; I don't think that if we got everybody united at this point that it would be very much more effective. I don't think so.

What was your third question? Up and down - well, I touched on that in my talk, but I have no answer. Interest comes up because there is a specific issue that can be personalized: You have to build a shelter, or there is fallout

in your milk. We experience this also in New York: The Scientists' Committee for Radiation Information, now the Scientists' Committee for Public Information, currently talks about the population explosion, or pollution, or race relations - originally it was only on radiation and on fallout. But, if one plots the number of talks given per month over the last several years, one sees large peaks and then practically nothing, and these peaks were invariably associated with certain events, like the fallout controversy or the shelter controversy. At the moment, we are in a slump.

Until the peace movement is able to get a good theoretical basis to sustain it, it will be strongly influenced by specific events, or specific issues (or the lack of them). The slavery issue was in that respect much easier; it was very easy to define "abolition of slavery". In a sense, we could talk about "abolition of war", but I think this will also turn out to be inadequate. Anyway, we have no good theory of war and peace, and until we do I think we are bound to go on like this: there will be specific issues where everybody can rally around, then things will die down. It is the nucleus of dedicated people that keeps fighting, and I assume you are going to be one of those.

3. I would like to make two brief comments: I am extremely interested in your statements. I think we all are. I wonder therefore, if - and this should apply to all the speakers - we may ask of you, that when you get the transcript for editing, you would put in the several references which you have just cited. Everybody should do it, because I think when the conference is published, the book will be more useful. For example, what we have discussed today.... we have just scratched the surface and I for one, would like to explore it more deeply.

My second comment relates to this business of synthesis. I consider this terribly important. You see, I started out with Nuclear Disaster, as a six - or eight-page memorandum, and then began realizing that there is an immense amount of literature available which bears on nuclear war and which isn't labelled as such. For instance, the typhus epidemic in Naples; or the plague which broke out in San Francisco after the earthquake, or the fact that volcanic

dust affects the weather, none of these are labelled under the heading of nuclear war. This is why they never showed up in The Effects Of Nuclear Weapons.(*) Yet obviously they are pertinent. So if the sociologist could also do this sort of thing, compiling material relating to the understanding of war it would be immensely significant.

(*) The Effects of Nuclear Weapons. Edited by S. Glasstone. Washington, D.C.:U.S. Department of Defense and U.S. Atomic Energy Commission, 1957 - Revised Edition, 1962.

SOME PROBLEMS OF INSPECTION AND CONTROL FOR DISARMAMENT

B.T. FELD

Although it is clear that the impediments to disarmament are at this time almost entirely political and psychological, it is nevertheless important for future progress to explore and understand the technical problems which must be solved before any appreciable disarmament can take place.

In the following, a number of examples will be given of inspection problems relevant to specific arms control or disarmament systems. More detailed discussions can be found in the references listed at the end.

I. An inspection system for an agreement on limitation of ballistic missile production and deployment:

Assuming there can be an agreement to cut back missile systems to a "minimum deterrence" force in both the U.S. and the U.S.S.R., it would be necessary to have a control agency with access to production facilities in order to ascertain that these limitations are being adhered to. It is not generally recognized that such a control agency would require a rather large staff as well as a considerable amount of freedom to check plants, inventories, etc. Some time ago, a study was made by a group of American arms control experts on the personnel requirements for such an inspectorate. Their estimates of the requirements to inspect either the U.S. or the U.S.S.R. follow:

1. Resident inspectors at plants manufacturing critical items (guidance systems, etc.)	200
2. Roving inspectors for periodic (6 monthly or yearly) inspections of plants manufacturing missiles or missile parts	500 - 1,000
3. Field office personnel	300
4. Records control center (checking of reports, compiling data, etc.)	1,200
Total	2,200 - 2,700

Evidently such a control system will represent a very large enterprise, and its implementation will raise technical as well as political problems.

II. An aerial inspection system:

Consider a disarmament agreement in which the number of missile sites and nuclear production plants is limited to a small (and known) number, with agreement for periodic aerial inspection to insure that no new sites or plants are being secretly constructed. Such an inspection system requires photography of areas where such clandestine activity might take place, and comparison of photographs taken at intervals of ~ 6 months to 1 year. Both the U.S. and the U.S.S.R. occupy territories of $\sim 36 \times 10^6 \text{ km}^2$, which only $\sim 4 \times 10^6 \text{ km}^2$ would need to be covered by periodic photography. (The rest are generally accessible by simpler means). This would require a minimum of ~ 500 sorties/year (and possibly 5-10 times more because of problems of cloud cover and necessity for more detailed checking of certain regions). This would take a fleet of ~ 150 aerial photography airplanes. The examination of the resulting photos would require a staff of $\sim 1,500$ trained photo-interpreters. (How many scanners are employed by, e.g., CERN?)

At present both the Soviet Union and the United States are independently engaged in this type of activity using reconnaissance satellites. Thus, the technical expertise is certainly not lacking.

III. Some comments on the effectiveness of random sampling:

It is not generally recognized how effective random sampling can be for detecting violations, even if each sampling has a relatively small a priori probability of detection, provided the randomness of the sample can be assured. Let p = the probability per inspection of discovering a violation; let n = the number of independent inspections. Then the probability per inspection of escaping detection is

$$e = (1 - p)$$

and the probability of escaping detection after n inspections is

$$E = (1 - p)^n$$

For example, suppose a seismic system has a probability of only 10% ($p = 0.1$) of detecting a clandestine underground test. Then, a series of 10 tests would have a probability of going undetected of

$$E = (0.9)^{10} = 0.35 = 35\%$$

Improving the individual detection probability to 20%, would give

$$E = (0.8)^{10} = 0.11 = 11\%$$

Another example: Suppose there were 200 missile sites randomly distributed over an area to which the inspectorate was permitted access to only 20% (but chosen at random). Divide the area into 200 sections, and consider 20 random inspections (i.e., the inspectorate chooses for inspection 20 of the 200 sections by a random sampling procedure). Let the probability of uncovering a hidden missile that happens to be in a given section be 50% ($p = 0.5$). The net probability of escaping detection is

$$E = (1 - 0.5)^{20} = 10^{-6}$$

(one in a million!) Even only 5 random inspections would give

$$E = (0.5)^5 = 3\%$$

Clearly random inspection is an exceedingly effective means of detecting violations. However, it must be stressed that the achievement of randomness, especially in a situation in which the inspected party is intent upon hiding its violations, is by no means a negligible problem.

IV. The problem of hidden stockpiles:

Unfortunately, the production of fissile materials for weapons has been going on with great intensity both in the U.S. and the USSR since the end of World War II. A few years ago, it was estimated that the material at hand was equivalent to about 50,000 megatons of TNT in explosive power. It has also been estimated, by atomic energy experts both in the United States and the United Kingdom that any system of inspection of past records to ascertain

the extent of the stockpiles, if such a system were put into effect under a disarmament agreement, could not be certain of an accuracy of greater than 10 - 20%. Even assuming the lower figure, and neglecting the increase in stockpiles since the above estimate, there would be an uncertainty amounting to $\sim 5,000$ megatons or 500 - 10 megaton weapons!

Thus, the problem of achieving comprehensive disarmament with reliable assurance of compliance is in deed a formidable one.

The answer, of course, is that effective disarmament cannot depend on inspection alone. The international atmosphere will have to be such that the incentives for compliance will be greater than those for violation. Nevertheless, it will not help the cause to pretend that the technical problems raised in the foregoing do not exist; or to insist that all problems will vanish once the nations accept any single proposal for G.C.D.

V. A note on the Underground Test Ban:

As a result of seismic research, especially on large arrays of coupled seismographs, the problem of detection of underground nuclear explosions is now much closer to solution. A recent report of a U.K. group claims that, using arrays consisting of many coupled seismographs, there is a high probability that up to 95% of all seismic disturbances of magnitude m 4 or greater could be identified (i.e., earthquakes distinguished from nuclear explosions). Magnitude m 4 is equivalent to a nuclear explosion of between 1 kiloton in hard rock to a bout 10 kilotons in dry alluvium. Such a system could detect and locate with high probability any disturbances of magnitude above m 3.5 and would have reasonable chance of detecting disturbances down to m 3, but the identification problem is more difficult the smaller the expbsion.

This same report estimates that an appropriate distribution of seismic arrays outside the U.S.S.R. could definitely identify 80 - 85% of all earthquakes in the U.S.S.R.

Probably, while further research will bring some further improvements, there is not a very great deal to be expected in the way of eliminating the possibility of some unidentified small explosions. Whether or not this means that on-site inspections are still required for an underground test ban depends on one's political assessment as to the relative importance of testing very small weapons as compared to the advantages of a universal test ban.

It is clear, however, that even for very small explosions, which would give rise to seismic disturbances of magnitude less than $m 4$, for which the individual identification probability would be considerably less than one (but not negligible), the discussions of the previous section III on random sampling apply with particular force to the detection of a series of tests whose number would have to be considerable if the tests were to be significant for the development of new weapons.

Unfortunately, no progress in resolving any of these points has been made in the Geneva meetings of the ENDC. However, in view of the importance of the universal test ban, both as a nonproliferation measure and as a device for overcoming the present doldrums in the disarmament negotiations, special efforts should be made to seek a compromise acceptable to all the nuclear powers. A recent suggestion may be of special significance here; this is for a moratorium on underground testing coupled with a provision that inspection could be requested by a neutral inspection body and invited by the country in question whenever the inspection body has serious doubts about the origin of a detected event. Such an inspection body could be provided by the seismic "Detection Club" of neutrals recently proposed by Sweden.

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Politics, Strategy and Disarmament

K. Lapter Tuesday, 14/6/66 - 9:30

After listening to yesterday's competent and comprehensive lecture given by Mr. Epstein, I feel some how reassured in omitting all relevant details concerning the long history of disarmament talks that were already presented to us with such masterly command of details. I will rather concentrate my efforts on trying to throw some light on the most important question: Why the post-war disarmament negotiations were so frustrating? Without finding an adequate answer to this question we will be unable to see realistically, the perspective of real disarmament.

During the many centuries of mankind's history, arms and armed men played an important role in the hands of rulers both in domestic and external affairs. In the latter "arms and men" were used as an expression of national power and as a tool in the struggle for the preservation and - if possible - the extension of national interests / as these interests were understood by those in power/.

A state without armed forces living inside a competitive state system was doomed to lose its independence, as did for instance, Poland at the end of the XVIII Century. When looking for a single and important factor in ascertaining the comparative strength of the armed forces that are or could be put at the disposal of that state. The bigger were these forces /in quantitative and qualitative sense/ the stronger the state; for the states with smaller armed forces, it remained only to submit, or to wage a hopeless war, or to look for support from another of the bigger powers - and to pay heavily for such help.

However, in the XXth Century the relationship between the states started to show some new peculiarities. All the states were included in one international system. Thus if only one of a major one started to increase its armed capacity it started a process of general rearming, an arms race, that theoretically tended to preserve the disturbed equilibrium. In fact it led to an armed conflict that turned, under circumstances, to a world War.

Similarly a process of disarmament could be only a general one; for if only one of the major powers refuse to participate in it - the process cannot even be inaugurated in a meaningful sense and even under the most favorable circumstances, could only be a superficial one, not touching the most important problems of 'physical' disarmament.

An additional difficulty was introduced in 1945, when a quantitatively new weapon -; the nuclear bomb - was introduced. At that time the United States had at their disposal a major part of the world's industrial capacity, that was further developed during the war. The United States had at the same time the monopoly for the new nuclear weapon. Under the existing rules of game the United States was to be recognized as the leading power of the world with all other states being to a bigger or a smaller extent subordinated to them.

Because of variety of reasons the USSR - the second world power at that time refused to bow to the US demands; thus the Cold War started, and with it an arms race. For even without nuclear weapons the USSR could to some extent nullify the threat of an atomic attack on Soviet cities with the preponderance in conventional weapons and with their possibility to overrun Western Europe, if provoked by a nuclear attack.

Both superpowers tried to eliminate the preponderance of their antagonist, i.e., to acquire nuclear capacity by the USSR and to acquire higher levels of conventional weapons by the USA. Therefore, it was impossible to mark any progress both in the Atomic Energy and in the Conventional Weapons Committees of the United Nations. The picture did not change even after the formation of a Disarmament Committee that was to deal simultaneously with both kinds of weaponry.

The stalemate persisted even when the USSR achieved their nuclear weapons stage and then almost simultaneously with the USA - the thermo-nuclear weapon-stage, while the United States utilized NATO and the rearmament of Germany to achieve equality in a conventional arms system. While at that time the situation outside Europe changed dramatically, it remained fairly stabil-

ized on this continent. The enormous massing of armed forces and weapons in the small area of Central Europe (where only a river divided two big war machines) and even the official ideology of both superpowers expressed in the belief in the inevitability of war, could not change the visible fact of strategic impasse in Europe, based as it was on somewhat asymmetrical (and therefore unstable) balance of forces. The asymmetry at that time was partly qualitative and partly quantitative. The position of the US was stronger quantitatively, for their national territory was almost immune to the possibilities of nuclear attack because of the distance dividing American national territory from the Soviet bases, while American and NATO bases were fairly close to the important centers of the USSR and its allies. The quantitative superiority of the USA arose from their bigger national income. This fact enabled the USA to spend more money on armament than the USSR - which had a smaller national income - could afford. For there is a threshold in financing the armaments which when crossed, disorganizes the national economy, resulting in chaos and anarchy. With this, the USSR would be placed with a dilemma either under the burden of armament or to surrender to the position of a second rate power.

The USSR escaped however this alternative by producing in autumn 1957 their first Intercontinental Ballistic Missiles ICBM with multimegaton nuclear charges in their warheads. So ended the situation of American territorial immunity against Soviet nuclear bombardment and with it the last of the qualitative preponderances of the USA. At the same time the quantitative preponderance diminished as well, though the U.S. preserved up to date some kind of quantitative superiority in the amount of nuclear charges.

In this new situation it became clear that a nuclear war would bring the unacceptable damage first of all to both the superpowers. This fact was openly recognized by President Kennedy who publicly proclaimed that in the case of nuclear war both the USA and USSR will lose in a few hours many millions of their nationals as well as most of what was in their countries created by the work of many generations. Therefore to avoid such a war, the number one item was put on the list of policy moves in both countries. On the Soviet initiative both giants

- as well as an overwhelming majority of existing states - accepted the theoretical goal of general and complete disarmament, and even agreed to accept "eight principles" of the so-called Zorin-McCloy agreement of 1961 as the basis for the movement towards the goal. This very document and the exchange of letters between Zorin and McCloy that accompanied it show, however, how small was the scope of agreement. The key principle - the fifth one - stated that all measures leading towards the GCD "should be balanced so that at no stage of the implementation of the treaty /of G.C.D./ could any side or group of States gain military advantage and that security is equally ensured for all".

The USSR stressed the principle of "equal security" while the USA, the principle of "balanced" proportional disarmament. In a letter accompanying the treaty, American representatives asked not only for the proportional disarmament but also for the verification of accepted cuts on armaments by the method of counting and localizing remaining arms. Both these demands were unacceptable to the USSR and I will try to explain to you, why. The proportional reduction of armaments - especially nuclear armaments - under the existence of the numerical preponderance of the USA could lead at some stage to the situation when the USSR forces could fail be low the "minimum deterrence" value, thus opening the country to an American nuclear onslaught without the possibility of Soviet retaliatory counterstrokes. For some strategists, the losses amounting to 10 or even more percent of population/i.e. in the case of both superpowers some 20 million, or 20 megadeaths/, are - to use a nice military expression - "acceptable", that is not deterring from initiating nuclear war. Especially if the side which is taking such an initiative knows exactly both the amount and the localization of the rocket sites of the potential enemy and possess preponderance in numbers of nuclear weapons. Such power could then - by using the first stroke strategy - eliminate most of the nuclear capabilities of its adversary and preserve

enough of its own to be able to blackmail the other one into surrendering or to destroying it. This is the reason why the USSR refused to accept McNamara's proposals for 'counterforce' instead of "countercities" strategy. It is paradoxical - but undeniable - that the counter-city strategy of an all out deterrence is under existing circumstances a really defensive and therefore really more human strategy. The new situation that existed from 1957 between two super powers was called a balance of terror. How delicate this balance was, is shown during the Cuban crisis of 1962. The meaning of the crisis and its solution was unequivocal: both giants resolved not to allow to develop a situation when they would have to exchange nuclear volleys against each other. The hotline linking the Kremlin with the White House symbolized this decision. At the same time both sides have clearly tried to impress each other with their resolution not to allow to arm by the other power any third state with nuclear capacity, be it Cuba in the Western Hemisphere or the German Federal Republic in the Eastern Hemisphere.

The reciprocal assurance between the USA and the USSR increased certainly their security and therefore the security of the world against a nuclear world war. It started, however, a chain of reactions among major allies of both superpowers. The Moscow partial Test Ban Treaty was not signed among others by France and the People's Republic of China; both of them started the road of an independent nuclear deterrent in spite of rather meager results of Great Britain who started this road already earlier. The net result up to date is that besides the USSR and USA also three other permanent members of the Security Council of the United Nations became nuclear powers. If a watertight non-proliferation treaty will not be signed in the nearest future we could have in a few years another dozen of nuclear powers with corresponding increases in the danger of a nuclear war.

Among the smaller powers, new situations reinforced the tendency towards strengthening their

non-alignment that gave them the same or almost the same security as was given to the smaller aligned powers by their attachment to one of the superpowers. They tried to utilize the existing balance of terror to form nuclear free zones - especially in Latin America and Africa - and to get an assurance from both sides not to use nuclear weapons against countries of these areas. Similar projects emerged even earlier in Europe among both neutral and aligned smaller powers of our continent.

The result of this development among two superpowers, three minor nuclear powers, major and smaller allies of superpowers and among the non-aligned countries, was a visible tendency for the erosion of the post-war pattern of two rigid and opposed camps headed by two superpowers. The picture that is slowly emerging out of the happenings of the last decade shows clearly that the future of mankind could be built securely only on the basis of a dissolution of existing alliances and of pulling down the barriers and discriminations that form an obstacle in the free exchange of material and spiritual goods between all nations and individuals. There are no easy ways toward this future and some intermediary goals on a regional scale would probably be reached first. But it is the only road towards the welfare and security of mankind.

WELCOMING ADDRESS/ Professor G. Gozzer

Ladies and Gentlemen,

I am deeply honored to give you as participants of the Pugwash Conference, the hearty welcome of the European Center of Education, its President and mine.

It was with great pleasure that we accepted the request of holding your initiative at Villa Falconieri, where residential courses, seminars and conferences concerning the education world are as a rule held throughout the year at national and international levels.

Founded by the Ministry of Education, this Center has three fundamental aims: educational cooperation at the international level; research through scientific methods in the teaching field, inter-discipline research in the framework of the two mentioned aims.

The conference you are going to begin is, for its own nature, type of participants and its objectives, well suited to the spirit of the Center and so it deserves our best consideration and regards.

In this Villa, where the peculiar characteristic is that the same guests are in charge of fixing their kind of community life and of governing themselves without any formal rule, we hope that you will find yourselves at home. In this spirit, if some annoying self adjustment is necessary, we hope it will be overcome by the splendor of the nature inviting all to peaceful thinking and common work by the beauty of the princely mansion which in its modern social function has been adapted without anachronism to the running reality.

I wish you good work. May you achieve the success which is expected by those who have organized and worked for this Conference.

Thank you.

CONCLUDING REMARKS: E. Amaldi

June 24, 1966

We have come to the end of our two weeks work and I would like to say a few words in appreciation for the contribution given to this first experiment of an International Summer School on Disarmament and Arms Control by all of you that are present here and the others that have already left. You may be interested to know the total number of people that took an active part in the discussions amounts to 42, distributed as follows according to their nationality: 1 from Canada, 3 from Czechoslovakia, 3 from Denmark, 2 from India, 17 from Italy, 2 from Poland, 4 from The Netherlands, 1 from Sweden, 1 from the U.K., 3 from the U.S.A., 2 from West Germany and 3 from Yugoslavia. Unfortunately, in spite of repeated invitations no participant from the U.S.S.R. was present. I have recently received a kind letter from Mr. Avramenko, Press Officer of the U.S.S.R. Embassy in Rome, in which he communicated to me that unfortunately this year the Russian scientists were not able to participate in this School because of previous commitments. I regret, and I am sure that all of you regret their absence, since we know how much they could have contributed to our lectures and discussions.

The effort made by us for organizing the School, and even more the amount of work made by the lecturers for preparing their contributions, the information and variety of points of view of ideas that are contained in the lectures and the discussions, are certainly of great interest and cover a very wide range, also because of the interdisciplinary structure of the School. Therefore it has been felt useful from various parts to make an effort for publishing as soon as possible the Proceedings of the School.

Only a few lectures have given us the manuscripts of their speeches. Therefore, we need more collaboration from all, or almost all participants, in particular from many lecturers. As you know a first, very rough draft of the lectures and discussions was taken or has been taken out of the registration, and will be given now, or mailed in a few days, to the corresponding author with the kind request of correcting it as soon as possible and mailing it to Prof. Carlo Schaerf in one month from the day it was received. I am very sorry to have to keep such pressure on you even after the end of the School; but I think that it would be a great pity to have made such an effort and to fail in the publication of the Proceedings which can represent a stone, a little one of course, to which others may later be added for reaching our main goal, the complete and general disarmament.

As you know, Prof. Bernard Feld from M.I.T. (USA) communicated to us his impossibility to come, for unexpected family reasons, the day before he was supposed to arrive and start to lecture on inspection and control. In consideration of the importance of the subject and of the competence of Feld in this particular matter, I will ask him to give us a manuscript of his lectures which, if you do not mind, could be incorporated in the Proceedings, with a note indicating that they were only read by title. I will also, of course, express to Feld, on behalf of all of you as well as myself, our warmest wishes for a complete and fast recovery of the health of his wife.

I would like to express once more, on behalf of the Organizing Committee, our warmest thanks to all lecturers, in particular to those that in spite of their official positions, have accepted to devote days of work and effort for the success of the School. I refer in particular to Ambassador Cavalletti, Head of the Italian Delegation to the Geneva Conference on Disarmament, who lectured this morning on the official point of view of the Italian Government, to Mr. Epstein, Chief of the Disarmament Affairs Office of the U.N., who in spite of his commitments, succeeded in devoting ten days to the School giving a few important lectures; and finally to Professor Burkhardt, Director of the Department for the Advancements of Science of UNESCO who has illustrated the role of UNESCO in the international organization for peace. We regret that Ambassador W. Foster, Head of the USA Delegation to Geneva, and Ambassador A. Roschchim, Head of the USSR Delegation to Geneva, were not able to accept our invitation to present to the School their corresponding official points of view; in connection with this, we should thank again Ambassador Cavalletti for his help in trying to obtain their participation or at least the participation of one member of the corresponding staffs. Dr. W. Grayson, of the USA Delegation to the Geneva Conference, was actually authorized to spend a few days here, and took part in some of our discussions.

In concluding these few words, I would like to stress the high level of all discussions which went on, all the time, in the proper Pugwash spirit, e.g., by trying to discuss the various subjects in an objective way, leaving out all emotional elements, even when the problems were rather delicate and in some ways very warm, one could say - quite hot!

A point that has struck me in these days is the need that we have of further discussions in order to arrive at a clarification not only of our different positions, but even of the meaning of certain words or expressions. Just to mention a few examples, the various definitions of Marxism or Marxist as they appear to be adopted or accepted by various nations or groups, and their relationship to sciences, in particular, to natural sciences; the various meanings given to words like ideology or coexistence of ideologies. I certainly do not want to start a discussion on all these subjects which were actually touched only incidentally these days, but which are quite often immediately below the surface and may give rise to a number of misunderstandings if not sufficiently clarified.

As a natural scientist I feel obliged to stress once more, the well-known fact, certainly already clear in Galileo's times, e.g., that the objectivity of our observations and of their rational and mathematical representations, does not necessarily mean univocity of epistemological points of view and, certainly even less, unicity of philosophical creed.

Finally, I wish to thank all the people that have worked for us in particular the ladies of the secretarial office, the Staff of Villa Falconieri, and in particular, to our host, Prof. Gozzer Director of Villa Falconieri; and I renew our thanks to the Bodies that have provided the financial means: the Carnegie Endowment for International Peace; the Presidency of the Cabinet Council; the General Direction of Cultural Affairs of the Italian Foreign Office and the 14th Pugwash Conference.

UNITED NATIONS' PEACE KEEPING OPERATIONS AS A POLI- TICO SOCIOLOGICAL PROBLEM

(some preliminary evaluations and hypothesis)

by J. NEIZING, Military
Academy of the Netherlands

I. Introduction

Much has already been written about the U.N. Peace Keeping Operations and experts of various disciplines have engaged in treating the subject under discussion. Almost daily, fresh studies appear on international armies in past and present, on the potentialities of supranational police forces of to day and of yesterday (1), and especially on the back ground and development of UNO activities in this field.

This is by no means strange since the maintenance of peace has always been UNO's main task, whatever specialized responsibilities may, in the course of time, have been added to its range of activity. To quote Murray (2), "continuing achievement in this vital role" is even imperative to UNO's continued existence. ON the other hand, the tenor and scope of this role has been influenced by the struggle for political power in the world and in the UNO itself. This tendency has been thrown into relief particularly and spectacularly in the UN Peace

(1) Historical data in: "Historical Appendix" in Rossner(6); some other historical data in Hans J. Morgenthau: "the Political Conditions for an International Police Force" Int. organ., 1963 p 393-403, in Bloomfield (10). A dutch study in this field is B. Røling "Over een gewapende macht ten dienste van de Verenigde Naties", Internationale Spectator 22/5/1960.

(2) G.S. Murray: "United Nations Peace Keeping and Problems of Political Control", Int. Org., 1962/63, p. 442; also in Bloomfield (10).

Keeping Operations. Therefore, a relatively strong disfunctional influence may be exercised by UN forces on the persistence of the UN organization. In other words: by their performance UN forces, intended as they are as conflict-reducing bodies, may contribute to the activation of existing political contrasts within the UNO, as ONUC experiences did show. For this reason, more and more scientific attention has been paid to the problem of the political control of the UN forces(3). Moreover, a supranational police force is often regarded as an ultimate requirement in a generally and completely disarmed world and an imperative complementary element in disarmament processes. Both the recommendations of the USA and of the USSR deal with such a force during the various phases of disarmament. For these reasons, whatever the differences between such a police force and the various peace keeping forces may be, specialists on disarmament problems have become more and more interested in UN peace keeping experiences.

(3) Cf. Clark and Sohn's "World Peace Through World Law", World Law Fund, Harvard University Press, 2nd ed. p. 314-335.

Recently published studies on the problems of political control:

- Roger Fisher: "International Police : A Sequential Approach to Effectiveness and Control", in "The Strategy of World Order", Vol III, World Law Fund, 1965.
- M.D. Dubin: "The Idea of an International Police Force" Roosevelt Univ. - J.M. Boyd: "UN and Peace-Keeping Activities: Present and Prospect" (Columbia Univ), both forthcoming.
- Jerzy Sawicki (Univ. of Warszawa): "the UN Charter and the Type of Military Forces of the UNO", paper delivered at the first IPRA Congress, 1965;
- Ruth B. Russell: "United Nations Experience with Military Forces: Political and Legal Aspects", Brookings Institution 1964.

As a consequence, the governmental disarmament agencies as well as Pugwash are also interested in questions of political control of UN Peace Keeping forces. (4)

So far two explanations for the great attention paid to the UN forces. One tends to say: ample attention. It is particularly the experiences with ONUC which have made the world give serious thought to the rules of UNO activities. Moreover (and this was another factor) there was the fact of peaceful co-existence which made UNO's role in a possible disarmament agreement less illusory and in turn, stimulated such consideration (5). Nevertheless, on closer examination, it soon becomes evident that amongst all the descriptive matter published so far, studies with a purely social scientific point of departure are almost non-existent even social-scientific studies concerning the so important problems of political control are as good as absent.

To be sure, apart from the official publications by governments and the reports issued by the Secretary General of the UNO, we have detailed studies on the experiences with one or more UN forces, and their numbers are legion. The best known are the studies of Gabriella Rosner (6), Burns and Heathcote (7) and O'Brien (8). Such reports invariably contain facts concerning political and juridical problems,

(4) For instance, ACDA sponsored research in this field, and dedicated to these problems a special column in its bulletin: "Disarmament and Arms Control, Studies in Progress or Recently Completed", Dept. of State, USA. Pugwash sponsored comparative research, to be done by IPRA (International Peace Research Association).

(5) Cf. Th. C. Schelling: "A Special Surveillance Force" in Q. Wright, W.M. Evan and M. Deutsch: Preventing World War III, New York, 1962.

(6) G. Rosner: "The UN Emergency Force" Columbia Univ. Press, 1963

(7) A.L. Burns and Nina Heathcote: "Peace Keeping by UN Forces" Princeton, 1963

(8) C.C.A. O'Brien: "To Katanga and Back: A UN Case History", London 1962

problems of organization and logistics, and many others, all of them relevant to the operation in question. They are technical studies from which a good deal of instruction may be derived, yet they do not furnish many starts to theoretical queries. Seen from this point of view, the rather summary, generalizing observations by Betty Goetz Lall and by Fenna v.d. Burg (9) lead us a step further: they set us on the track of some interesting politico sociological problems by their endeavor to generalization. As such, Miss Van den Burg sums up five characteristics of UN operations since 1956:

(a) the UN force has always been meant to be a "conflict reducing peace force" and never as a "fighting force";

(b) all UN forces were composed of parts of the armies of the members who did not belong to the permanent members of the Security Council - moreover when these forces were formed, more and more consideration was given to the individual wishes of the "host country";

(c) the peace keeping forces never began their task but with the permission of the host country;

(d) the peace force abstained from intervention in the internal affairs of the host country;

(e) the role of the Secretary General of the UNO grew ~~more~~ and more important.

A piece of theoretical dynamics lies in this enumeration. To be sure, what are called here "characteristics" are partly role expectations which have developed gradually (a-d) partly a certain amount of political power, institutionalized in a vacuum of conflicting goals (e). Proceeding, these role expectations have to be greater (b,c) or lesser (a,d) extent shown corresponding roles. More emphatically, one could ask whether or not these four principles (a - d) are at all compatible, and if so, with what

(9) Betty Goetz Lall: "Peace Keeping since 1946" in 'Disarmament', Information Bulletin of the World Veterans Federation, 1965, 5 Fenna van den Burg: "De vredeshandhavende taak der Verenigde Naties", in "De militaire spectator", juli-aug. 1965.

type of operation. Such dynamics - we shall revert to this subject later on - do not find expression in Miss Van den Burg's observations, which, when all is said and done, goes without saying in the framework of her article.

We have also quite a few sonorous reflections on the "Meaning" of a supra - or international armed force and suggestions as to the improvement of the conditions under which such a force should function in the future. In Bloomfield's well-known collective work (10) we can find some of the often quoted observations in question. However intelligent, however "theoretical" these studies may be, they by no means form a social-scientific theory, nor does the above mentioned group of studies for that matter.

And then there is a third category of studies in which the UN operations appear. It is right to stress the word "appear" in this case, since these operations do not feature as a focal point in the category referred to. They are studies in which reports are made of research on the opinion of a population (or the political elites of this population) on a number of "issues". Disarmament often belongs to these issues, and the role played by the UN is often raised. In the simplest case the person or persons conducting the inquiry merely ask an opinion on the subject. A comparative research - comparative in respect of time and place - is much more satisfactory. But it is better still to study the results of inquiries which do not try to measure a person's opinion, but to gauge attitudes, that is to say more social psychologically orientated studies in which the attitude adopted towards the UNO in general, and towards the UN operations in particular, is considered in relation to other attitudes. A comparative survey in this respect is that of Buchanan, Krugman and Van Wageningen (11). More gratifying studies, from a social-psychological point of view, have been written

(10) L.P. Bloomfield (ed.): "International Military Forces" M.I.T., 1964

(11) W. Buchanan, H.E. Krugman, R. van Wageningen: "An International Police Force and Public Opinion", Princeton, 1954

by Lerner, in cooperation with Marguerite Kramer and with Morton Gordon (12). Also the studies of the Canadian Peace Research Institute, i.e. by Jerome Laulicht, should be mentioned. (13)

However, none of these three types of studies are in compliance with our demands. The first two are not, because they are lacking a sociological definition of the problems they deal with; the latter, because it refers only indirectly to the object of our investigation! What we need is a sociological theory which as far as its aims are concerned, relates the functioning of widely divergent types of UN forces to the political text in which this functioning takes place. It must be a theory, further, which possibly leads to a modest prediction in respect to the effectiveness of a UN force. When constructing such a theory one can place anew the materials of these three types of study and throw some light on it from the viewpoint of politico-sociological theory.

II. Internal Functioning

Any social system and any organization as a special type of social system can be described in terms of internal and external functioning; there is a clear connection between the two, and attention to this fact has been paid by the sociological theory of organization. The distinction made in plain speech between the "organizational" and "political aspects" of UN forces for the greater part runs parallel to the sociological distinction between its internal and external functioning. For the greater part - not wholly. In a sociological description of these "political aspects" we shall most certainly have to pay much attention to the relation of the organization and its environment, but this relation is influenced by the internal functioning of the organization, and vice versa. Moreover, political

(12) Daniel Lerner and Morton Gordon: "European Leaders Look at World Security" Cambridge, Mass. 1960; D. Lerner and M. Kramer: "French Elite Perspectives on the U.N." Int. Org., 1963, 54 - 76

(13) J. Laulicht: "Public Opinion and Foreign Policy Decision", Journal of Peace Research, 1965, 2; J. Paul and J. Laulicht: "In Your Opinion: Leaders' and Voter' Attitudes on Defence and Disarmament", Can. Peace Res. Inst., 1963

values also play a role in this internal functioning, both directly (politically divergent interpretation of purposes) and indirectly (anticipated political consequences lead to a specific pattern of institutionalization). Therefore in this paper on the political aspects of the UN forces, we will give much attention to the external functioning without however, denying the mutual connection between internal and external functioning.

For all their differences in composition and purposes, the UN Peace Forces have always been organizations constituted by parts of various national armies, no more (supranational) no less (national). This sounds rather trivial, yet it is meaningful in order to "localize" some of the problems.

The supranational element in the UN forces is minute. In some respects we can hardly compare the personnel of such a peace force with that of the real UNO bodies. In all probability a certain measure of internationalization of "UN standards" takes place among the members of the UN force, but this internationalization will bear a different character from that shown by members of the other UN bodies. Thus for instance, when researching into this process of internationalization among UN experts, Ingrid Galtung discovered a "fear to return problem": the longer one was in the service of the UNO, the less one became au fait with the (material) conditions in the country of origin (14). In the first phase of this process of disorientation, the expert voices much ideal criticism side by side with his criticism of defective UN organization. But after having reached the "point of no return" (15) a strong identification with UN organization follows. So, ideal criticism vanishes and organizational criticism is directed differently (16). As far as the members of the UN

(14) I. Galtung: "The International Civil Servant" unpublished lecture, IPRA Inaugural Conf., Groningen 1965

(15) This process might be described in terms of Festinger's theory on cognitive dissonance. We tried to do so, in respect of the structure of ideologies of religious and political radicalism, in: "Onheilsprofetie en radicalisme" (Prophecies of Calamity and Radicalism) Assen. Netherlands 1966

(16) Conclusions by Galtung.

forces are concerned, this problem does not exist and certainly not as long as the U.N. Force is no supranational and more or less permanent body. On the contrary, participation in UN operations does not seldom lead to a higher re appointment in a higher rank level in the army of origin, and to individual status promotion by a certain amount of revaluation of the military profession in the home-country. In this context one might take the case of the Irish army as an example.

So, from an organizational-sociological point of view it would seem to be more meaningful to compare the internal functioning of the UN force with that of other international forces than with that of other UN organizations, however, remarkable this may sound when viewed in the light of actual politics. Thus, for instance, the following important problem presented itself during the "MLF-experiments": the dissimilarity in the rank hierarchies of the participating naval forces, a consequence of which was that confusion arose in the command structure. This problem actually makes various writers of experience with UN forces attach value to a majority of Commonwealth countries among the participants (17).

But, on the other hand, the UNO force is more than a mere addition of national elements. Participation in UN operations means, to say the least of it, the addition of a new dimension to an occupational ideology. There is even an illusion to this in the recruitment campaign for the Canadian Army. Possibly too, this new dimension might mean a psychic "outlet" for frustration among some of the officers. It is therefore meaningful to bestow attention on the motivation of the individual participants in UN operations. Not seldom will volunteers for the UN forces be individuals who have kept themselves aloof from the community, also politically. (18) But aloofness

(17) For instance: W.F. Gutteridge: "The UN Force in the Congo, British Army Review; October 1962

(18) H.V. Dicks: "The International Soldier- a psychiatrist's View", in Int. Org. and in Bloomfield.

- H. Guetzkow: "Multiple Loyalties": theoretical approach to a problem in international organizations", Princeton 1955

politically, may have two reasons. It may be that, disappointed with the abandonment of "traditional values" in the community, the individual seeks to realize these values in the framework of UNO. It is also possible that he hopes to find a new and more adequate political ideology in UNO connection by standing aloof from such traditional values. The type of officer who once applied for a commission in the Netherlands military unit in Korea is, politically speaking, probably quite another type than the volunteers who went to Kashmir in 1965. But both types were, probably, not representatives for the dominant political values in the Dutch Army. So it is not merely a question of divergent political interpretation (by the governments of the participating armies) of the aims and purposes of the UNO forces - always expressed in very general terms -, but we also have to contend with the problem of the divergence between the political aims of the individuals participating and those of their respective governments. Will this divergence increase in the course of time? If so, with whom and in what situation? From a politico-sociological point of view one might in this respect anyway, discover the most interesting parallels between the process of internalization among the members of the UN forces and that of the members of the "real" UN bodies.

III. Conceptualization

"Peace Keeping" by UN forces always means intervention in a political situation or viewed sociologically, a contribution to a political process. This is manifest in the case of a "Fighting Force"; but also "pure" Peace keeping forces have a political history behind them, and their operations have political consequences.

From a formal juridical point of view, one could probably designate this intervention with terms such as restoring the status quo ante or maintaining the status quo as the case may be, with at the back of our minds something like a period of cooling off, or freezing conflicts. The words "peace" and "security" as they appear in the Charter, are explicitly connected with a prevention of outbursts of violence

in conflict situations. But that does not mean that "Peace Keeping" is therefore synonymous with "Peace-Making", as Terwisscha van Scheltinga rightly points out. The UN forces will not only be unable to change the fundamental causes of the conflict, nay, a (protracted) presence of the UN forces will even be able to encumberance the solution of the conflict(19)

Here the sociologist would even like to go one step further. For him politics is an omnipresent blend of endeavors of individuals and groups, constantly changing in structure. By means of limiting the alternatives of behavior in competing individuals and groups, such aims are directed to aligning the decision making of a system of authority with their own purposes. The degree in which such purposes are realized is an indication of the amount of power the group in question possesses in this respect. The sociologist is interested in the whole of these power relations (political structure) and the fundamental changes to be observed (political process).

As, for instance, matter can be more or less radioactive, thus the performance of the UN force can be more or less "politico-active". Whether or not it is meant to be so, whether anticipated or not, the UN force will always be a factor in this political structure. Logically, the rate if this "politico-activity" will depend on the situation in which the UN performance takes place, and on the type of action. Sociologically, there is a mutual connection between the situation and the nature of these actions. Political structures determine the measure and the manner in which the UN force behaves; it can in turn, therefore, become a factor in political processes.

Such a "dynamic" outlook would appear rather chaotic. But it is the task of the Social Sciences to seek a certain measure of regularity in this seeming chaos and to explain these regularities. The prime requisite is to make a few relevant classifications of political processes and of characteristics of UN operations.

(19) F.J.A.Terwisscha van Scheltinga: "Politieke aspecten van VN vredesoperaties", Int. Spectator, 1966, 3 p.208.

Theoretically, political processes can be distinguished according to their scope: there are changes in local political power structures, intercommunal ones, etc., up to changes in the power structure "of the world" (mondial political processes). Political processes can also be distinguished according to their dynamics. It is true that power structures are always in motion, but the rate of change can differ widely. There are countries where power structures alter quickly, as is in the case of most of the new nations, where we find a rapid transition from traditional to new political élites. There are also countries where these structures have crystallized, hence showing a much slower change. Of both types of structures of power - the "dynamic" and the "static" type - we find a special form the equilibrium phase, in which the groupings involved in the incursive struggle for power possess almost equal positions. Logically, a dynamic equilibrium is a phase that is no more than a dot on a line. Psychologically and sociologically, it can be a very dramatic phase ending in the monopolizing of power by a new political élite. In the other hand, a static equilibrium looks more or less like a pair of scales, on both sides of which the weights are changed simultaneously.

It is of importance to know that dynamic structures show a different political behavior as compared with static structures. There is a link between the measure of political stability and, for instance, the degree up to which a "Verantwortungspolitik" is carried out by those playing an active political role (diplomacy included). The greater the stability, the more careful one will endeavor to calculate one's political strategy, and anticipate the political effects of certain measures (such as a UN force)

This classification of political processes (local intercommunal, mondial; "static" versus "dynamic" whether or not in their equilibrium phase) is of special importance if one wishes to analyze the relation of political processes to characteristics of UN performances and vice versa. In the following paragraph we shall go in to this matter in both ways.

IV. External Functioning

a) Political process and UN forces: Institutionalization

From a formal point of view, the UN force has the politically neutral task of Peace Keeping. It proceeds from the principle of non-intervention; its composition is in conformity with the wishes of the host country; its activities are subjected to the consent of this host country, etc. These, however, are merely formal principles and they actually hide the political reality. Even non-intervention may have important political consequences. The wishes and permission of the host country - in themselves the dominating part of the power structure in case - are usually drawn up after the necessary pressure has been exerted, pressure from the side of a prominent group of countries, or a group of prominent countries in the UNO.

From a sociological point of view it might be more useful to note that, apart from the formal tasks of UN forces, up to now preference was given to an "observer role" (as associated with political neutrality of the UN force) over a more politically active "constabulary role". Both these roles are here to be seen "idealtypisch" they are to be considered as abstractions, as never existing extreme situations between which social reality could be located. Such an observer role of the UN force might be considered to be in line with an executive role of the Secretary General; and a constabulary role with a policy making role of the Secretary General.

UNO is an international organization. The Security Council and Assembly reflect in their decision making predominantly mondial political processes. The political power of the Secretary General (as a supranational institution) in respect of a certain domain of power, such as the political control of the UN forces, depends on the measure in which countries in the UNO power structure who are in a position to accomplish an imperative distribution of values, wish to or must

tolerate this political power. The smaller the political power of the S-G, the more he will stress the "observer role" of the UN force. The greater his power is, the more he will stress the constabulary role.

Given a certain power-position, the measure in which the S-G will associate Peace-Keeping with a constabulary role depends on the measure in which the political process in the host country can be connected with those of the (group of) countries dominant in the UNO power structure. Should the latter preponderantly be the case, then in a situation of equilibrium, there can be no question whatever of any UNO operation; in a dynamic situation, UNO decisions will leave no room for a position of political power of an UN secretariat (20) and a UN command (21)

Hence we can sum up the following alternative situations:

1) There is no immediate connection between the local political process of which the conflict is an expression, and the mondial political process. In this case, the UN force will possess a strong supranational character, and the tendency of the S-G's translating "Peace Keeping" in terms of a "constabulary role" will be strong. An effective intervention by UNO is functional to its persistence as an international organization, and functional to supranational elements of the UNO organization.

2) There certainly is a connection between the local and the mondial political process. Generally speaking, the UN operation, if possible, will be disfunctional in respect to UNO. Owing to changes

(20) J.W. Holmes: "The Political and Philosophical Aspects of UN Security Forces, International Jour. 1964 3

(21) Many remarks could be made on the politically very important question of the relation between S-G, UNO staff members and UN command. However, such would be beyond the scope of this rather condensed survey.

in the mondial power structure, and because the power structure within UNO not fully reflects this political process, a number of variants appear:

2a) Within the UNO there is a static equilibrium UN operations are not tolerated (Cf. Hungary)

2b) Within the UNO there is a dynamic equilibrium owing to which an "anticipatory attitude" in political action is not yet present in the same measure as in static situations. Temporarily, special constellations of power relations and vacua of power make their appearance, owing to which it will be possible to decide on a UN operation. Here, however, a UN operation is strongly disfunctional with respect to the persistence of the UNO as an international or supranational body. According to the S-G's possible interpretation of the latter situation, this can be sub-divided into:

2b¹) A country or group of countries cannot effect an imperative distribution of values, in consequence of which an UN operation will be necessary to restore the balance (formally: "depolitization"). The S-G can appropriate a certain amount of political power, but he will exercise this power as little as possible (Cf. Congo)

2b²) A country or a group of countries cannot effect an imperative distribution of values, in consequence of which a UN force will be added to the political power position of the opposite parties. The S-G will not acquire political power of any importance (Cf. Korea)

The rapidly developing struggle for power between "East" and "West" has been putting an equally rapid end to the original conception of an international police force with a permanent staff committee. In consequence, the supranational political power of the S-G was minimized and with it the possibility of an institutionalized "policy making role". True that, according to Røling(22), owing to the expanding preparatory and informative task of the Secretariat, some of these tasks are beginning to show

(22) B.V.A. Røling: "Over oorlog en vrede" Amsterdam, 1963, spec. 153 - 173

aspects of a supranational organization but the results cannot be more than a small and latent position of power for the S-G. The gradual transition to a static equilibrium made situations as described in 1 become less frequent, and also minimized the chance of the S-G's policy making role. Hence, it was a shifting from 1 to 2a. However, the strategy of peaceful coexistence, as developed since 1956, made it possible for the S-G to play a modest role in situations where it was in the interest of both parties to avoid conflict. This means a slight counter tendency from 2a to 1; nevertheless, the political power of the S-G remains very limited.

The position of the "new nations" within the UNO political structure strongly increased, especially after the "package deal" of 1955. In respect of the Uⁿ forces the foundation of this position had already been laid by the "Uniting for Peace Resolution", which although undoubtedly not meant to do so (23), in a later phase certainly contributed to this "small power revolt". But owing to an increasing political struggle among these new nations, which was partly due to a reflection of the contrasts between East and West, most divergent motives may lie hidden behind the majority resolutions of the Assembly, which recommend the S-G to organize a UN operation in one guise or another. Hence, a shifting from 1 to 2b. Possibly also a certain degree from 2a to 2b.

On the one hand, a modest form of institutionalization of a supranational UN force has been accomplished in the form of "technical provisions". In this respect we might refer to the communication centres at the S-G's disposal in some countries. Nor should we forget the small nucleus of military advisers to the S-G, and in particular the UNTSO, of whose experiences since 1948 he has often made good use(24). Also mainly because of the contrasts behind the majority resolutions of the Assembly, the S-G himself was forced to take the initiative in interpreting politically the recommendations made.

(23) Murray, op.cit.

(24) V. d. Burg, op.cit.; Bloomfield, op.cit., 9

On the other hand, this will lead other countries, including the new ones, to make the UN force a minimally small one, and it also tends to make such countries suspicious of any propositions for further institutionalization of this force.

The greater the UN force, the less it will restrict itself to playing the observer role. The greater the institutionalization of the supranational character of the Secretariat, the freer the Secretary General's interpretation will be. Under the present conditions (situation 2a and 2b), this would be strongly disfunctional to the UNO. Accordingly, we do not only hear of arguments for keeping down UN forces from the side of dominant groups in UNO's power structure (25), but also from authors like Schelling (26) and others who concern themselves with the fate of UNO, and it goes without saying, from the Secretary General himself (27). Given the political structure, the S-G on the one hand is forced to go on playing a "political role as a vital element in the United Nations Peace Keeping process" (28). But it is just this role in this situation that makes his propositions suspicious beforehand, and dooms to premature failure even the most modest endeavors to attain institutionalization, (29) such as was the case with Hamarskjöld.

(25) Cf. Stanley Hoffmann: "Erewhom or Lilliput? A Critical View of the Problem", Int. Org. 1963, 404 ff also in Bloomfield.

(26) Th.C. Schelling: "Strategic Problems of an International Armed Force" Int. Org. 1963, 465-485; also in Bloomfield.

(27) Lecture delivered by U Thant, Harvard Univ, 1963

(28) P. Martin: "Peace Keeping and the United Nations, International Affairs, 1964 no 2, 191-204.

(29) For a broad survey of the main efforts and proposals, see O. Stokke: "United Nations Security Forces: a discussion of the problems involved", in "Peace - Keeping, experience and evaluation," The Oslo papers Norw. Institute of International Affairs, 1964, p. 52-67 For some additional data see Røling, op.cit. 1960 and '63; Lester B. Pearson: "Force for UN", Foreign Affairs Apr. '57 (concerning the common measures committee) p395

Experience with ONUC, where "the temptation to interfere from the outside was extreme", according to Murray (30), and to quote Katani(31), "the tendency to skip over the framework of the United Nations was readily apparent", has rendered a better understanding of all this and has shown the problem of the political control" of the UN force as something of the greatest importance. The escalation from Peace Keeping Forces to fighting forces was actually a symptom of the tension we can expect if situation 1 develops into situation 2 during the operations. Tensions between all parties concerned, between these and the S-G and last but not least between the S-G staff and the UN command might develop.

b. UN force and political process: purposes, role - expectations and effectiveness

It seems clear from all this, that tendencies in political structures have their influence on the measure and manner in which the UN force will operate. But also the contrary is true: the UN force influences the political structures in a certain measure and in a certain way.

From what we have already seen - the slight amount of institutionalization of a supranational UN force - follows that, under the present circumstances the influence on the mondial political processes may certainly be small. Thus, "politico-activity" refers mainly to local and intercommunal political processes. Hypothetically speaking, is it possible systematically to reduce this "politico-activity" to a number of regularities recognizable in the external functioning of UN forces?

The nature of politico-activity, given a certain political process, is dependent on the purposes which the UN forces dictate to themselves. The "recommendation" put to the Secretary General are to be translated into more concrete purposes by him and

(30) Murray, op. cit.

(31) Hidejiro Kotani: "PeaceKeeping: Problems for Smaller Countries", International Journal 1963/64

his commanders. One of the questions that presents itself when laying down these purposes is whether or not the UN force is to endeavor to isolate the conflict of the world, or to separate the conflicting parties (interposition) (32) Both purposes mentioned here are thought as "idealtypisch". In reality, there is a difference in accent. Both purposes always appear combined. Successful isolation usually leads to the necessity of interposition, and interposition is meaningful only when the conflict can be limited in scope.

Isolation of the conflict always means: isolation in any measure of the struggle for political power lying at the root of the Conflict. Endeavors to isolate, therefore, merely, have a serious chance of succeeding if the local political process in question does not (yet) form a part of intercommunal political processes or that the parties concerned with such intercommunal political processes are not (yet) in a position to influence the purposes of the UN force.

One could say there is a certain arrangement of work between the Secretary General and the UN force. Should isolation of the conflict situation come first and utmost, then the S-G will develop great diplomatic activity, and the UN force will perform additional operations. Should interposition come first, then the centre of gravity will be found in the UN forces, and the Secretary General will put forth additional diplomatic activity.

Generally speaking, the conflicts, with which the UNO has to cope, are dynamic political processes (sometimes also in the equilibrium phase) which have come to a violent outburst. Here, interposition is of the greatest importance, seen from a politico-sociological point of view. We should like to restrict ourselves to the two following hypotheses:

(1) interposition in the case of a local dynamic political process leads to a local dynamic equilibrium;

(32) Of course, also, other classifications of purpose are possible. See, for instance, Knut Midgard: "Preparations for Future Contingencies" Oslo papers p.64-79

(2) interposition in the case of a local dynamic equilibrium leads to a local static equilibrium.

Needless to say that one could add more hypotheses to the above mentioned on the basis of other classifications of purposes and/or with regard to intercommunal political processes.

Given certain purposes, the measure of politico activity can vary enormously, dependent upon the political process and the effectiveness of the UN force. The measure in which the UN force assigns itself a "constabulary role" instead of an "observer role" may be considered as an indication of the strength of the factor that the UN performances mean to local political structure. A constabulary role points to the inclination to intervene in local conflicts, hence in the local intercurative power relations. An "observer role" on the contrary, points to the disposition to limit oneself to only registering conflicts, thereby leaving their solutions (that is to say: intervention in incursive power relations) to other bodies. In this respect we come to the following hypotheses:

(3) interposition in the case of a local or intercommunal dynamic political process accentuates the "constabulary role";

(4) interposition in the case of a local or intercommunal dynamic equilibrium accentuates the "observer role."

These two roles should always be regarded as "idealtypisch" as we suggested in the foregoing paragraph. They always appear in combination. In a dynamic political process however, both roles exclude each other to a considerable extent. Moreover, given the purposes, the chances are great that in such a situation an "observer role" will rapidly change into a "constabulary role". In other words: limiting oneself to observation in the case of interposition and especially in the case of isolation of dynamically developing political structures, is actually a "testimonium paupertatis" of UN forces. This brings us to the last hypotheses:

(5) the greater the effectiveness of the UN force

the stronger relatively its "constabulary role" will be accentuated;

(6) the lesser the effectiveness of the UN force, the stronger relatively its "observer role" will be accentuated.

"Effectiveness" according to Etzioni (33) is determined by the degree in which an organization realizes its goals. An "effective" organization of the UN force will be considered as to offer more possibilities for intervention in the local political process, that lies at the root of the conflict situation. Moreover the members of an effective organization will sooner be inclined to "positive reactions" One should in this case think of manpower, material provisions and of the morale of the staff members (34) as conditions of effectiveness.

Much of what has been advanced here as hypotheses will, in the practice of political behavior be recognized intuitively. And this also holds good for further refinements which one can introduce into any of these hypotheses. In equilibrium situations, especially situations in which the disposition to anticipate is great, one will actually take these mechanisms into consideration. But it is a good thing to approach them in a more precise and less intuitive manner. Our capacity to prediction should be of the best. Situations in which the chances of failures of the UN force are great should be recognized as clearly and as soon as possible, since such a failure embodies considerable consequences for the United Nations Organization as a whole and hence for world peace.

Breda, 10 June 1966

(33) Amitai Etzioni: "Modern Organizations" 1964, 8

(34) Much about these problems of morale can be learned from the story by Phillip Forest: "Sudden Emergency", World Wide Magazine, Feb. 1964.

EFFECTS OF NUCLEAR WEAPONS:
NUCLEAR WAR

T. Stonier: Mon. June 13 - 10:40.

Before we talk about disarmament, I think it is terribly important that we begin to understand the realities of nuclear war. Everybody knows that nuclear war is a fearful thing, but that in itself, is not enough. All of us who are deeply concerned about the problem of disarmament should have at our command information which offers real insight into the fact that while nuclear war would not necessarily mean the end of humanity, it would mean the temporary destruction of our civilization.

Now it is difficult to assess just what "temporary" means: Would recovery be achieved in only a few generations, or would we recede into another dark age lasting for centuries? To a large extent of course, this would depend upon the magnitude of such a nuclear war.

To begin with, let us consider a single weapon. A few months ago the American Air Force lost a bomb. It was a nuclear bomb that was lost when a fuel plane collided over Spain with a Strategic Air Command bomber carrying four "twenty megaton class weapons". (It is known that the SAC bombers carry twenty five megaton weapons). Three of them were recovered immediately. Two of them had burst but not detonated; that is to say that one or more of the TNT charges had gone off rupturing the casing and spilling radioactive material on the countryside. Collecting this was an expensive but not terribly difficult task. What turned out to be a very difficult task was recovering the fourth bomb, lost in the Mediterranean. After the Navy did recover it, a picture of the weapon was published. If you saw the picture you realized that it was not much bigger than a table, the sort of thing one could easily lug around in a station wagon.

Let us just stop to consider for a minute the amount of energy that was stored in that particular kind of weapon. Let us, in fact, talk about the effect of such a single twenty megaton weapon (we will not even make it twenty-five); and what the effect would be if it were detonated in New York City. Then let us proceed to analyse the effects of a nuclear war in general.

The first statement that one can reasonably make is this: if such a bomb went off in midtown New York, the total number of people killed would be about ten times the total number of battle deaths that the United States has suffered throughout all its history. That is from the American Revolution through Vietnam: A single weapon would kill ten times as many.

When such a bomb is detonated, a small man-made sun is created. The temperatures internally are of the order of millions of degrees; at the surface of the fireball they are thousands of degrees. The heat is sufficiently intense that if the bomb were detonated in the air, on a very clear day, first degree burns would be incurred as far as 70 kilometers away. At around 45 kilometers one could receive second degree burns, and third degree burns at perhaps 40 kilometers. Persons standing out in the open at 30 kilometers, would probably be exposed to heat so intense that their clothing would ignite.

If such a weapon were detonated on Columbus Circle in New York it would create a crater which would be 1.6 kilometers across and 200 meters deep, with a 50-meter lip. Almost any of the midtown skyscrapers could be placed in the hole and would barely protrude above the rim. Of course, should the explosion occur at Columbus Circle, most of the midtown skyscrapers would not only be knocked down, they would be partly melted. The average two-family brick building would be knocked down up to 12 kilometers away in an area from the Inwood section of Manhattan to the North, to Prospect Park in Brooklyn. So-called moderate damage would occur out to 25 kilometers, which means almost every corner of the city would be damaged including Yonkers to the North. Moderate damage means that while a house might still be standing, by peace time standards it would be more economical to tear it down than to try to repair it. These are the obvious and the immediate effects.

There is a third effect, immediate radiation, which we do not have to go into with such a large weapon as this. Although there is a lot more of it, it does not travel very much farther than the old-style atomic bombs of the type that were dropped on the Japanese cities. The two bombs dropped on Hiroshima and Nagasaki at the close of World War II were twenty kiloton weapons, that is to say twenty thousand tons of TNT equivalent. We are speaking about twenty million tons of TNT equivalent when we discuss one twenty megaton bomb. The old

style atomic weapons were not even big enough to provide the trigger for detonating these new weapons. In the Japanese cities, radiation was a great medical problem. This would not be a problem now because anyone close enough to be affected by radiation would also be close enough to be killed by both the blast and the heat. Thus the two main immediate effects are the intense heat and the blast.

Within about twenty minutes, in the case of the New York burst, or any other burst where there is a sufficient density of combustible material, there would ensue a phenomenon known as firestorm. Nuclear weapons can start fires in two ways: Firstly, from the intense heat, and secondly from the blast wave which would knock over stoves, wreck gasoline stations, cause electrical short circuits, and so forth. Whenever there is a very large burning area containing a sufficient amount of combustible material, a firestorm results. Such phenomena have been observed in forest fires, and during World War II in the planned fire raids against enemy cities. The first such successful "scientific raid" was in late July of 1943 against Hamburg. The method was to bomb the city with a mixture of high explosives and incendiaries. When high explosives alone were dropped, not enough fires were started. If incendiaries alone were dropped, then the civil defence people were able to put them out. But by using them both, the fire fighters were forced to stay under cover until the fires had become too large to be controlled.

So it was that within twenty minutes a thirteen square kilometer area was ignited and a pillar of burning gases developed which had a diameter of 2.4 kilometers and which reached 4000 meters high. Some of the RAF planes coming in the second and third waves were caught in this pillar and flipped on their backs. A few went down. According to the police engineers, the temperatures went up to 800 degrees, and this figure is quoted in the American Strategic Bombing Survey. I have seen German documents which make more sense in view of other data known on the mass burning and they indicate that the temperatures went to 1400 degrees. Now, at that temperature all kinds of things burn that one normally does not think of as combustible. This includes the asphalt in the streets. The streets were literally burning. As many people died in this raid as were to die two years later at Hiroshima.....It will never be known how many people died, but it was of the order of 60,000.

Most of them, the majority of them, died in air raid shelters. Most of those that died, mercifully were victims of carbon monoxide poisoning. It was estimated that seventy percent died this way; the other thirty percent died of heat. The heat in some of these shelters was so intense that in a few instances, where the shelter was covered by hot smoldering rubble, the temperature was still above the kindling point, so that when the shelter was opened up ten days later, the influx of fresh oxygen caused the shelter to burst into flames. A number of the rescue personnel were injured in such incidents.

Let us take into consideration the size of this phenomenon: The Hamburg area involved ultimately an area of 30 square kilometers. I have mentioned earlier a distance of 30 kilometers in which clothing would ignite. The 30-kilometer radius defines the area likely to be involved by a single twenty megaton air burst, and encompasses about 2800 square kilometers. To put this figure into perspective, let us consider that the largest forest fire in the continental United States during the last half century was the great Tillamock fire in Oregon, and that was less than 1300 square kilometers. Thus with a 20 MT airburst, we would see the simultaneous ignition of an area twice as large as this very large forest fire.

Fallout probably has received more public attention in connection with nuclear war than anything else, perhaps because as the effort to develop a civil defence scheme progressed (see discussion elsewhere) it was realized that blast and fire were not essentially different from what had been encountered in World War II, except quantitatively. What was wholly new was fallout. Significant amounts of local fallout occur when the fireball actually touches the ground. The intense heat causes the material to vaporize and as it reaches the cooler layers of the atmosphere and the fireball burns out, it begins to condense and settle. The heavier particles settle faster and the lightest particles may drift many hundreds of miles. Now it is reasonable that a single twenty megaton ground burst could contaminate an area the size of the State of Connecticut to the extent that it would be a very serious threat to life.

The real problem with fallout is not that an informed population cannot protect itself against it. 60 centimeters of dirt is as effective as 40 centimeters of

concrete; the simple act of digging a foxhole and getting in to that and keeping things away from the edges could save your life if you could stay in a fox hole for weeks. Almost any building that is still standing can be made to serve as a shelter and your chances would be good if you knew what to do.

The real problem of fallout is that all relief, rescue and repair operations will be completely impeded. If the power lines are down they will stay down. Anyone requiring medical attention is not going to get it. If a city catches fire, no one is going to put it out. This is the problem of fallout. When the water pumps start rusting no one is going to repair them. All kinds of things that normally go wrong will do so, but there will not be any crews out to fix them. These then are the intermediate effects, and fallout would literally put a damper on all remedial activity for the next two weeks.

Consider the more long range effects such as economic consequences: A modern industrial economy consists of a delicately interlocking network of mutually interdependent activities. Some of us in the New York area have had experience with this when the subway men suddenly went on strike. We see all kinds of other things go wrong. It is not only that we have trouble getting to work, and that there are more traffic jams and so forth, but consider for example the plight of the newspapers: not only do sales decline, but stores put in fewer ads because the shoppers are not coming. Much more dramatic was the power failure in November, 1965 which brought home better than anything I know of, the complexities of modern society. A detailed discussion of this power failure and its implications has been published previously (War/Peace Report, Jan. 1966, p. 12 - 14) and is included in the Appendix.

I would like to mention here some historical experiences particularly those of World War II. The Germans, we are inclined to forget, were thoroughly beaten in 1945; they were beaten economically. In March of 1945 the German Ministry of Finance made a report saying that unless the transportation system could be restored, the economy would be completely bankrupt in from four to six weeks. They cited the precipitous decline in munitions production which occurred not because the plants had been that severely damaged by allied raids, but because these plants could neither get the raw materials in, nor ship their products out. The German transportation system had been disastrously hit by the allied air raids and it turns

out that it was not so much that an air raid over a railroad yard had put a lot of holes in the tracks. The Germans got so good at repair work that in many cases before the last plane had left, the first train was already running through. What the Germans could not keep up with was the destruction of the rolling stock, particularly locomotives. The effects were so serious that the Strategic Bombing Survey conducted after the war, decided that we had wasted time bombing German aircraft factories because if the Germans had produced 1,000 airplanes a month, it would not have done them any good; they would not have been able to fly them because there was no gasoline. The German report was made in March of 1945; the Armistice occurred seven weeks later, so that it was pretty accurate.

The question of gasoline brings up an experience during the power failure. A member of the Marine Corps was flying to New York on November 9, the evening of the power failure. His plane had approached the New York area and was scheduled to land at Floyd Bennett Field, a Navy airfield near New York, just about the time the lights went out. Floyd Bennett Field did not have enough stand-by power to operate the landing lights for aircraft. The plane, along with others was flying around. Then came orders to land in Westchester Airport, where emergency lights were operating. On the way to Westchester, passengers expressed anxiety as to how they could get out of there to the very important meeting they were scheduled to attend. They were told not to worry. The National Guard had already been alerted to have their trucks and jeeps ready to rush them wherever they wanted to go. They landed in Westchester only to discover that the National Guard keeps its trucks and jeeps empty of gasoline as a matter of routine except as it comes time to move them. Pumping gasoline requires electricity. There was no electricity, and so they did not go to New York that night.

I think to those who lived through it, the power failure in New York demonstrated the interconnection of such things. When the electricity went out, the heat went out, not because heat comes from electricity - it comes from coal or gas or oil - but because thermostats work on electricity. And so it went. We found that the subways were not running, that elevators in apartment houses and offices had stopped dead. We were very lucky that time. The power was on the next morning and there were very few casualties. We were fortunate in that the weather

was good; it was not icy cold. If it had been a foggy or rainy night, there would have been several air tragedies. Instead, the whole thing turned out to be sort of a lark - with people wandering up Madison Avenue in the bright moonlight. It became the best adventure some had in five years or even a lifetime. It was therefore not serious.

If the power had been off for another few nights, an increasing death rate among the ill, the infants and the aged could have been expected. With a cold spell the increased deaths due to pneumonia and similar diseases would have been sufficient.

A study done for the Office of Civil Defence by a group of the Federal Power Commission had come out in March, 1965, just six months before the massive power failure. It stated that widespread power failures as a result of nuclear warfare were not likely. I think that this is typical of the lack of reality which we bring to our consideration of nuclear warfare. They could not even anticipate that the complex of interlocking networks that have developed over the years could result in a power failure involving thirty million people. Thus the power failure brought home to many of us how a single critical link in our economy can have widespread ramifications. The chief links are in fact power, transportation, communication and what might be called the bureaucratic network - paper work, and so on. I once read a science fiction story about a machine that would destroy only paper: records, money and similar articles. You can imagine the effects on a society such as ours. In any case, the point I am making, or that was made for all of us by the blackout, is that our economy is extremely vulnerable. If you destroy the cities of our nation, you destroy very much more. The kind of naïve analysis that says that if 70 percent of our productive capacity were destroyed, we would have 30 percent left, is about as naïve as saying that if you chop off 70 percent of a man you have 30 percent of a man left.

One quality of our lives that we are very much used to nowadays is cleanliness. We tend to forget how fast a population can get lousy. There are lice around all the time, perhaps even in your own home. You may not like to think of this but the chances are that there are rats in or around your home. The rats carry lice and fleas, and these would be only too ready to hop over the human host if given a chance. Normally we do not give them a chance. We take baths and change clothes regularly.

If however, we were subjected to what the people of Naples were subjected to in 1943, things could change drastically. Naples was bombed first by the Allies because the Germans were using it as a port, and later by the Germans because the Allies were using it as a port. In the meantime, there had been several changes of administration. There were very serious food shortages, as you can imagine. There was hardly such a thing as soap - or even hot water. So one had a lot of people without soap and hot water, who in addition were very hungry and could not care less about going to extra trouble to clean themselves. These people, during air raids, were crowded together in shelters of every description, so that if a person was not lousy before entering the shelter, he was lousy after coming out. It is not surprising that when typhus was introduced, it found fertile ground for developing into a great epidemic. It is worth noting that typhus had not been known in Italy since the period after World War I. Its reintroduction probably came about through refugees or soldiers returning from such places as Africa.

Fortunately, there was present at this time, a high-morale, well-supported organization in Naples, the U.S. Army. It engaged in the largest mass delousing campaign in history. The soldiers deloused everybody over a period of two weeks, and they did a magnificent job. In those two weeks the army managed to nip the epidemic in the bud. This was possible because there was an American occupation army. Presumably following a nuclear war there will be no such agency.

Let us take a few other examples. We forget that in the U.S., from Western Kansas out to the Pacific there is endemic in the rodent population an organism known as Pasteurella pestis. This is a bacterium which causes plague, bubonic plague. Normally in the U.S. we have one or two cases annually.. I am not referring to cases brought in from some oriental port but to cases originating here. Last year was a very bad year, there were six cases, all occurring in New Mexico. Five of the six cases involved children who had played with animals who had the disease. Plague does not normally appear in the human population except accidentally. Generally it does not spill over from the animal population because there are two kinds of barriers, ecological and sanitary.

Ecological barriers exist because normally the human population does not have that much contact with the sick animal population. Following a nuclear war, things would be very dif

ferent. Hundreds of thousands, perhaps millions of people would be forced into the woods. They would be looking for food, for fuel, and for water. The ones searching for food are the most likely to get into trouble because the animals that are easiest to catch are the sick ones. We are going to have people contracting plague at a time when our public health services are in the state of disorganization. With large groups of people migrating around, in a much more exaggerated way than during the dust bowl migrations, the barrier between the animal and the human population will be knocked down and once this disease is within the human population we will not be able to check it. This has been true of epidemics following most of the wars of history. Far more people died from the diseases that came in the wake of the wars, than were killed by the weapons utilized in those hostilities.

I would now like to look at other biological problems that do not deal directly with the human population but that might be even more disastrous. The best way to introduce this topic is to tell you about a bug, a beetle, called the Engelmann's Spruce bark beetle. In 1939, a severe wind storm of gale force swept through Colorado, knocking down many of these very tall, majestic, Engelmann's Spruces. Engelmann's Spruce bark beetles cannot live readily on healthy trees. The pitch contains substances which make it very difficult for them to breed and rear young. On the other hand, they cannot live on dead trees either. Normally you see, they act as nature's forester; they live on the occasional sick old tree that is dying off and they eliminate it. In this case there were trees, overthrown by the wind, which still had roots in the soil. Such trees take several years to die, so they are an ideal breeding ground for these beetles. In about two years the beetle population had built up tremendously and had run out of dying trees. They then began attacking live trees. What happens is this: the first wave attacks and perishes. It does not breed successfully. And a second wave attacks and then perhaps a third wave. But each wave begins to weaken the tree more and more. So that by the time a third or fourth wave hits it, the tree has in fact become sick and does succumb. Now insofar as a beetle population increases at a rate of five hundred to one, even if 99 percent of the beetles are killed in the process there is still a five-to-one ratio of reproduction. And this is exactly

what happened. For the next six or seven years sixteen times as much timber was destroyed by the beetles as had been destroyed by all the forest fires in that area in the preceding thirty years. In 1949 there was a swarm of beetles, much like the biblical locust plague, which moved on to another area. A few of them, only a small part of the total, fell into a lake and drowned. They formed a drift which was about half a meter deep, two meters wide and three Km. long.

If one looks at the effects fallout is likely to have on nature, one cannot conceive of a more ingenious technique for turning a forest over to bark beetles. Fallout would do two things: It would provide lots and lots of sick trees, and the vertebrate predators - the woodpecker (which is the bark beetle's greatest enemy), skunks and porcupines and the smaller mammals which are very instrumental in keeping insect populations in check, would be eliminated. One would remove the predators while providing a preferred food supply. Similar results would occur in the prairies, and almost any other kind of ecological system one can envision.

The United States is on the same latitude as North Africa, and in many ways our climate is not very different. We have our hostile patches from the Bad Lands in the Dakotas down to the Mojave Desert in California, just as North Africa has to the south of it, the Sahara Desert. And we have had our experiences with the dust bowl. North Africa, which is now largely barren desert, was once the granary of the Roman Empire. One of the forces, some think the major force, which led to the decline of the Roman Empire was that its bread basket began disappearing. This set up all kinds of social, political, and military stresses. Before it was a granary, it was covered by thick forests. It used to be thought that the desert formation was brought about by a change in climate, but the bulk of evidence indicates that this was not the case at all, that there are erosion deserts which can be brought back if enough effort and material is put into the area.

There is another factor which is unknown to such a degree that it is difficult to know whether one should bother talking about it at all. I bring it in to indicate to you how uncertain this whole business is. It is well known that one of

the greatest influences on climate is the amount of fine volcanic ash in the stratosphere. This acts to change the heat balance because such fine particles tend to reflect the short wave radiation, the ultraviolet or blue end of the spectrum coming in from the sun, without significantly impeding the re-emission of the long wave radiation that comes from the earth, the infrared radiation. There are good indications that this may be of sufficient importance to explain past periods of glaciation. If one does a calculation as to how much dust might be kicked up by a modest nuclear war, i.e., three thousand megatons on each side (which is probably less than ten to fifteen per cent of the present single stockpiles), and if these involved megaton-class weapon ground bursts, one suddenly begins to feel very very uncomfortable. It is a serious possibility that if that dust (and we do not know the precise amount needed - no unclassified data has been published, or if classified data even exists) is of sufficient amount and is fine enough to stay up for years, an ice age might result. The particles would have to be small enough, less than two microns. We do not know what fraction of a megaton explosion on dirt (which has never happened, they have always been on coral) would be small enough to stay up. While one can say that an ice age may not happen, there is nothing that we know at this time that would rule it out. The perturbations that we would set up in nature could be that extreme. The year 1816 was called in folklore "poverty year" or "the year without a summer" or "eighteen hundred and froze to death". What had happened was that in 1815 Mt. Tomboro on Soembawa Island in Indonesia erupted. It was perhaps the worst eruption in modern history. It sent up enough dust that the weather the following year was so cold it snowed in July in New England. Crop failure was total. The same effect was observed in Scandinavia. Poor Richard's Almanac, which was stated by Benjamin Franklin, predicted such weather and every one thought, what a remarkable coincidence! But Ben Franklin knew the phenomenon of certain rings which formed around the sun during the day by the diffraction of light. It is the same type of phenomenon that produces beautiful sunsets. He pointed out that when you see those "Bishop's rings" you can expect a cold year.

On September 25 and 26, 1950 there was enough smoke blown over from a forest fire in Western Canada that the amount of sunshine in Washington, D.C. was only 52 percent

of normal. You only need to drop the average temperature a few degrees, about two degrees centigrade, to depress the snow line a thousand feet, which is already sufficient to initiate a modest ice age. If you reduce the amount of solar energy coming in by ten percent and kept it this way for some years you would achieve a lowering of six degrees, which would be worse than the worst ice age on record. How much dust would be thrown up by a nuclear war and how long the dust particles would stay up are the big unknowns. The fact that large quantities of dust particles would have a serious influence on weather is absolutely clearly established. Whether such dust particles would then initiate another ice age is not certain.

There is another aspect of the question to consider: irreversible social destruction. It is highly unlikely that a human society robbed of its cities, with a disorganized economy, confronted by plague and famine, having lost a fraction of the population exceeding the black death figures of the fourteenth century, will be able to rebuild very fast. The average person is going to be more likely to go out and forage in the countryside for his family than return to his job in the factory which might pay him money, but money which he cannot use. We saw this at the end of World War II when things were relatively stable. I am told by people who have gone through Germany that in some of the farmhouses one now sees beautiful grandfather clocks and Persian rugs exchanged for bags of potatoes in the summer of 1945, when things were bad in Germany. Society will rapidly lose all kinds of skills and the kind of organization to maintain these skills thus reverting to a dark age. One can point to two historical examples: the potato famine in Ireland in the 1840's, and the fate of Mesopotamia at the hands of the Mongols in the Thirteenth Century.

Ireland, prior to the potato famine, had a high birth rate, a high marriage rate, only a moderately high emigration rate. Following the famine it developed the highest emigration rate in the world, which has persisted until the present time. The marriage slumped to the lowest in the world, and the age at which people get married is the highest in the world. All this is still true a hundred and twenty years later. The figures changed sharply before and after the famine. It is very interesting to look at the population curve. It drops precipitously

and then levels off about 1950, when it begins coming up very slowly. Now this kind of phenomenon is difficult to explain. These are people who invoke political pressures from England and other pressures. I think that when one looks at the evidence which involves many kinds of indicators including certain folklores and tales, however, it becomes clear that the impact was the trauma of the potato famine which produced a fantastic misery. It remained for generations in the consciousness of the Irish, perhaps one should say in the subconsciousness of the Irish. After a hundred years things are just beginning to come back. If one looks at Europe there are a few countries that are as out of the mainstream economically as Ireland. Only in the last decade has it pulled up and then largely from outside sources. Ireland is the Emerald Isle, it is not like the tundras of Finland, it could support many more people. It has a population density one fifth that of the rest of the British Isles.

Mesopotamia is an example of irreversible social destruction. During the Dark Ages in Europe, the Europeans were not even worth trading with because they had nothing to offer Mesopotamia. The only civilized areas were Constantinople and Granada, both of which were occupied by the Arabs. Rome had become a second rate country town. You might go there occasionally on business, but it was not much. Northern Europe - just savages - Vikings and Goths and such wild tribes. Mesopotamia was certainly one of the bright spots on earth around 1000 AD. It was very far advanced in terms of things like medicine, astronomy, poetry (Omar Khayam, for example); it was the Baghdad of the Arabian Nights. The Mongols managed to kill an awful number of people (this was done under Kubla Khan, the grandson of Genghis Khan), some estimates indicate that there were eight hundred thousand people were killed by sword in one week after the fall of Baghdad. But what was worse for Mesopotamia was that they destroyed the irrigation system during the process of military operations. The system very quickly silted up, not only upstream so that the country became arid, but downstream so that swamps which bred Malaria were formed. In the meantime the red plague, typhus also struck. And so Mesopotamia became what is now known as Iraq and was irreversibly removed from the mainstream of history. Baghdad retained some of its importance because it was on the trade route linking east and west, but it never again reached the importance it had before.

We take our environment, our social environment and our natural environment, so much for granted we do not realize that although they are extremely stable and have homeostatic mechanisms, there comes a point where they break down. If one looks at our society following a nuclear war, our surroundings, it may be somewhat analogous to a man who is brought in on a stretcher to a doctor by a friend who says, "Doctor, can you save him? He has just been in an accident and his leg is mangled." The doctor replies that he thinks he can although he will have to amputate. Then the friend says "But you know he also has diabetes." The doctor replies that this makes him a poor surgical risk. It will be much more difficult. And the friend adds, "Last year he had a heart attack," and it also develops that he has a spot on his chest and that it is lung cancer, and so forth. It is the same sort of thing. You can insult, physically insult, nature and society tremendously but there comes a point where everything breaks down. I think there is no question that even a modest nuclear war, in the light of what we have just discussed, would cause just that.

I have concerned myself mostly with the environment and have not taken up the question of the genetic damage produced by nuclear explosions. I believe we should all take with the utmost seriousness the statement of two eminent geneticists that the damage inflicted by nuclear war on future generations would still be expressing itself when our present controversies would be mere historical curiosities.

Anyone who claims that a nuclear war is justified in order to maintain certain cherished values, should ponder on what values there will be following a nuclear war.

LAPTER: The Role Of Smaller Powers
Wed. 15/6/66 - 16:00

There are many ways in which the existing system of states could be subdivided: developed, and undeveloped, old and new, powerful and weak, etc. For the needs of discussion for today the division line will form two groups of state: big and not-big ones. If we exclude from the second category (from non-big ones) the group of very small states (mini-states like Monaco) and states under 1 million inhabitants we will arrive at the category of smaller powers. The arbitrary line separating from this category, states under one million inhabitants is to be supplemented by, a less arbitrary line separating smaller powers from bigger ones.

For the purposes of our deliberation we will accept as a big power (or major power) a state that acquired nuclear capacity by its own effort and which at the same time is a permanent member of the U.N. Security Council. By an accident of history all of the permanent members of the Security Council became nuclear states - and none outside their ranks. Thus we can accept even to this day that to the group of big powers belong states enumerated in the Charter of the United Nations: The United States of America; the Union of the Socialist Soviet Republics, China, Great Britain and France.

I will say a few more words about the definition of the smaller powers. I use the word "power" to describe a state with some real influence on a regional or a subregional scale. And I do not use the expression "nation - state" because it seems to me rather confusing because not all nations have at present their own, independent state and some states are multinational. And what is perhaps still more important, it seems to me improper to speak about "small nations". Each nation being unique, is equal in value (if not in power) to each other; therefore, all nations are great and quite often less populous nations could have, and historically had, made the bigger contributions to the human civilization than the more populous big power.

Out of 129 independent countries at the end of 1965, to the category of "smaller powers" as described above, 114 belonged; six of them represented so-called "divided nations". Out of the 84 colonies or non-self governing territories there were six with the population exceeding 1 million. Out of 117 members of the United Nations "smaller powers" represented an overwhelming majority; without 5 big powers and 11 states with population under 1 million; 101 states of the category we are interested in, belonged to the United Nations. Among these 101 states there are a few non-members of the United States and some forming the upper class of smaller powers like India, Japan, Pakistan, German Federal Republic and a few others.

Theoretically smaller powers, if united, could force their will and wishes upon the major powers. But it is a big "if" and there are usually among them more points of difference than of agreement; and one has to remember that the big Five are in population and resources really big and represent over one quarter of the earth's population and an enormous economic potential.

Anyway - the fact is - that the smaller nations are not united, and they do not represent a voting block in the UN. They are not united on all issues even in regional organizations like the Organization of American States, or Organization of African Unity or the League of Arab States. And in many instances the disunity of smaller powers turns into enmity between them and there were even instances of armed clashes in Africa and Asia. I am stressing this point just to show that the line dividing smaller and major powers does not leave necessarily all the virtues on one and all sins on the other side of the border. The smaller powers could be aggressive, selfish, militaristic as the big powers at their worst; it is only their smaller capacity to do harm to the others that tends to breed illusions about their more idealistic behavior.

Besides a large extent of disunity one is struck by the diversity of smaller powers. No two of them are alike. Some are very small in size, some fairly large; some densely populated, some scarcely. Some are undeveloped economically with a large part of population still illiterate, some are highly developed modern industrial societies. Some of the smaller powers are socialist, some are capitalist and in some, it is still possible to find feudal or semi-feudal order. Some of them are aligned with the politico-military blocks headed by a superpower, some are not aligned.

This diversity does not necessarily breed enmity but certainly makes the unity of smaller powers more difficult to achieve. It is a rare case when the smaller powers vote unanimously in the General Assembly or in the Security Council. The analysis of their votes in the United Nations shows that they do not always vote with solidarity with the whole subgroup (regional or otherwise) to which they belong. Rare instances of something nearing the unanimity could be found only in two cases: when there is an unanimity on the given issue of the major powers also, or when the issue is concerned with the problem of colonialism or neo-colonialism, then there is almost always a kind of cooperation between the states of the "Third World" and the socialist states.

From the point of view of smaller countries the General Assembly of the United Nations seems to be the proper instrument to exercise their influence on world events as far as they could unite on given problems and to achieve the necessary majority of 2/3rds for more important questions. But under the rules of the Charter, the resolutions and even declarations of the General Assembly are recommendations only, without possibility of their enforcement. Therefore one could observe a tendency to shift more weight and more power into the General Assembly where the principle of the sovereign equality of all states took the form of a rule: one country - one vote. This tendency was encouraged and utilized during the first years of the UN by the United States. When faced with the Soviet Union's veto in the Security Council, they

tried to push the same or a similar resolution through the General Assembly to take part in the enforcement of that resolution. This practice - besides not conforming with the letter and the spirit of the Charter - reinforced the fatal tendency of breaking the world into two inimical camps. Under such conditions the very existence of the United Nations was put in danger, and with it the peace of the world; to try to enforce a resolution against a superpower could lead only to a world war.

That does not leave, however, the small countries defenceless or without influence on world affairs. There are at least two lines of the UN action where the smaller nations could and do play a maor role. One is connected with the Peace-keeping Forces. To be useful and used, they ought to be formed only by the smaller powers with the exclusion of present permanent members of the Security Council. And then there is the moral force, still treated rather not seriously by some people in and outside the decision making circles, but gaining certainly in importance. This moral force is a major factor in shaping the world o-
pinion and will influence even more in the future the history of mankind. It is this moral force that the smaller countries are exercising through the General Assembly discussions and voting as well as through their attitudes towards other inter-
national bodies and towards major problems of the present day world. If one tries to find the unifying factors that allow the diversity of the smaller countries to find a common denominator, it could be put simply in three words; independence, peace and welfare.

The independence of most of the smaller states now in existence is a young one; it is the minority that started their independent life before the Second World War and still less of them gained freedom before the advent of the XX Century. The

struggle for the independence of the right to form a state of ~~their own~~ the so-called "new nations" - some of them with many centuries of glorious history but enslaved for a long time by the colonial powers - with the strong feeling of national pride and conscience of sovereign equality that ~~they~~ were and are ready to defend by all means. But they soon are discovering that to keep their dearly bought freedom in tact, they have to support the world's struggle for peace, for only in the peaceful world could their independence and their freedom of action be preserved. And not less quickly they learn that to preserve independence does not only mean to direct their own political life; for nowadays there are much more subtle ways to influence smaller and weaker nations than the old brutal method of turning a country into a colony of an Empire. Similar results could be achieved by enforcing upon a weaker country, by a variety of means, an economic dependence that usually is described by the term: neocolonialism. Thus, the interconnection between independence, peace and welfare comes clearly to the minds of both the people and the governments of the smaller nations and this fact allows them - or most of them - to form in many instances a common platform on important issues of world policy, like the liquidation of the remnants of colonialism, freeing the economic relationship from political ties, changing for the benefit of developing countries the existing terms of trade and supporting steps leading to the disarmament.

Before discussing the last mentioned problem, i.e. disarmament. I wish to mention in more detail, specific areas of smaller nations major influence, namely the regional arrangements. They are - as is well known - provided for by the Charter but some of them, though invoking the Charter are factually used against its goals and principles.

The existing regional groupings could be divided into two kinds: those including a major power and those formed by the smaller countries only.

The first kind is usually a politico-military block and therefore it tends to diminish the freedom of action of the smaller powers that belonged to it, especially when the world situation becomes tense. The reason why the smaller powers voluntarily agree to surrender parts of their sovereignty (and any alliance contained such a partial surrender) is explained by their belief that otherwise their whole existence as an independent state could be jeopardized by the outside forces. Inside such blocks, the smaller powers are, however, trying - in principle to lessen the militancy of a given block. They try to utilize their influence for lowering the level of the conflict with the opposing block and to accommodate a situation of diverse social and political order on one world. It is first of all in their interest to arrive at a situation when all opposing blocks and all kinds of discrimination that goes with it, are dissolved. But even before that they are able to display all kinds of initiative: witness Poland with her well-known proposals for the denuclearization of Central Europe as well as her less ambitious plans for Central European nuclear freeze, proposals for a non-proliferation treaty for the countries of the above mentioned area. Of a very special interest, from the point of view of regional security arrangement, is the Polish Plan for a European Conference on Collective Security System for our continent.

Still such organizations like NATO, CENTO, SEATO or the Warsaw Treaty - with all their differences - cannot be accepted as real regional arrangements and therefore sooner or later they have to disappear. For the same reason the Organization of American States - because of the USA participation and their overwhelming influence - cannot be recognized in its present form as a true regional organization. It seems to me, however, that there exists a trend to form a Latin American regional

organization. perhaps the efforts of the nations of this region declare Latin America as a denuclearized part of the world could be seen as a step in this direction.

The other two - partly overlapping regional organizations are the League of Arabian States - though it will probably in the future be extended to other non-Arabian states of the Middle East, - and the Organization for African Unity - again - to be extended in the future to the nations in a still colonial south of that continent.

In Europe we have many organizations covering the whole continent and not so few that hold the name European although their membership comes mostly if not exclusively from the Western part of Europe. There doesn't, however, exist an all-European security organization. Security arrangements covering only the Western half of Europe [Locarno, NATO] failed to give even Western Europe the feeling of security rather help than obstruction in the rise of German Imperialism and militarism. For the countries of both parts of our continent it is now clear that real security has to have an all European structure, the details of which are to be discussed freely among the representatives of all the European states. It is beyond doubt that the basis of agreement for such a common security system could be formed by the following principles: all existing states and frontiers are guaranteed against aggression and interference from outside; an act of aggression on one European state, belonging to this security system will be treated as an act of aggression against all of them; the treaty on European security System should be drafted in conformity with the UN Charter and the actions taken under this treaty should conform to the security arrangement as foreseen by the Charter.

And now let us say a few words about the role of smaller powers in problems of disarmament and in connection with it, the question of - to use the phrase coined by the late President Kennedy - "Non-Proliferation."

As I said already the smaller powers are far from being angels and conflicts among them are fairly common. And then some of them have a genuine fear that their independence could be lost if they will not have enough arms to defend themselves from the attack of imperialistic powers. So they spend quite a large part of their small budgets on armed forces. Some do the same as members of the wider alliance to which they belong. Still - with the very few exceptions - they support such projects as General and Complete Disarmament (GCD) in which they see not only an increase in their security but also a possibility to save money and manpower now spent on military budgets.

The developing countries see in the GCD a step that will allow richer countries a part, at least, of financial means freed by disarmament, to be turned into gifts or loans or other forms of economic help for the poorer part of the human race.

In the ENDC in Geneva the representatives of smaller powers support as a rule most of the proposals concerned with the reduction of armaments. The aligned countries - just because of their alignment - are perhaps less active in Geneva than the representatives of neutral and non-aligned "eight", who see their role both in putting forward new proposals, acceptable to both sides and in not allowing a dangerous impass to be developed between two blocks of aligned powers.

It is quite human that in disarmament negotiations, just as in economic talks the smaller non-aligned states (especially, but not only, the developing countries) try to exploit the competition existing between socialist and capitalist politico-military blocks to get some political and economical advantages for not supporting the other block; they try - with bigger or a lesser effect - to lead a policy that is aptly described as "making two cows at once"; therefore, sometimes they dislike the situation when leading powers don't use their good offices and are directly discussing and coming to a common conclusion on the major problems of disarmament. But these are rather minor sins and on the whole, in disarmament negotiations the attitudes of the smaller powers is highly helpful and positive.

So it is the position of the majority of smaller powers in the question of non-dissemination of nuclear weapons usually called non-proliferation

Non-proliferation means a specific weapon freeze. In a period of arms race it is logical that all types of freeze will precede the processes of "physical" arms reduction of GCD. The problem could be put in one sentence: how to prevent a sixth power to become an additional member of the existing five member Nuclear Club?

As it is well known it is now much easier and much cheaper to produce a nuclear weapon than it was - say - ten years ago. Some experts say that for the cost of 100 million dollars, a country with an average level of technology could produce in a few years its first Hiroshima type nuclear weapon; to sustain the production it will be necessary to add to it, yearly, only a fraction of this sum. So there are now many countries that could afford to start nuclear weapons production. If one more will do it, many others will follow the suit and the dangers of a nuclear holocaust will grow accordingly. That is quite certain. Therefore, there is theoretically at least, a general agreement underlined by proper General Assembly's resolutions that a "water tight" non-proliferation agreement is to be signed and executed. The field of disagreement is, however, still fairly large. It concerns two problems. The first one concerns the position of some of the smaller nations, especially those who are financially and technologically able to produce by their own effort nuclear weapons in a period between one year and four years. There are now about 15 states with such a capability. For their voluntary resignation from the production of nuclear weapons they demand some real step in disarmament by the nuclear powers. They demand some help in the development of peaceful uses of nuclear technology.

The second difficulty comes from the interpretation of what is and what is not the additional /"sixth"/ nuclear power. This question arose mainly, if not exclusively, because of the nuclear appetite of the German Federal Republic. On the other hand, the GFR as the third biggest industrial country with a major nuclear establishment, is one of the few countries that could in a relatively short period produce both the nuclear weapons and the means of their transportation. On the other hand, however, the GFR is bound under the Paris Treaty of 1954 not to produce nuclear biological and chemical weapons on its own territory; to verify this - a special Control Commission of the Western European Union was set up.

Thus the only legal way open to the GFR is either to produce nuclear weapons outside their country or to receive it from a nuclear state or to get at least partial control over nuclear weapons by some multilateral arrangement. For obvious reasons the last method appealed best to the Bonn government. Various plans for MLF, ANF, NATO Nuclear Force or European Nuclear Force were or are being discussed in connection with Bonn demands for an active role in nuclear armament. The GFR's attitude forms now the major obstacle for the agreement on the draft for the non-proliferation treaty. The US draft contains wording which is treated by all socialist and many capitalist countries as opening possibilities for a stepwise nuclearization of the GFR, the first step being the formation of a multinational nuclear force. The dangers involved in such possibilities are clear and if the GFR acquires even partial nuclear capability, most, if not all, of her neighbors will be forced to follow suit and many other European and outside European non-nuclear powers will join this new arms race. And there are possibilities of even stronger reactions against the nuclearization of the GFR. But let's believe that reasons will prevail and the non-proliferation treaty - a gap-free one - will be signed by all smaller powers.

The world in which we are now living is at the same time getting smaller, tighter and ever more diversified; it is a dynamic world whose growing unity contains a growing amount of contradictions. Therefore the position of both bigger and smaller powers and their relationship is full of contradiction as well. It is clear, however, that for the welfare of the world the cooperation between smaller and major powers is necessary, for only together they could solve the main problems of today. It seems to me that looking back on the road passed by mankind in the last twenty years one could discover that the role of smaller powers is increasing rather than decreasing. To some extent this fact is symbolized by the numerical changes in the UN Security Council, this fortress of big-power privileges (and obligations, let's not forget!). In the nearest future the five permanent members of the security council will be joined not by six but by ten non-permanent members from the ranks of smaller powers.

CONCLUDING REMARKS AND SUMMARY

Friday June 24, 1966 - 16:00

AMALDI: We thought not to have a proper lecture, but only to have a kind of résumé in some ways similar to the report that one has at the end of a physics conference. Thus, we have asked Calogero to say a few words about his opinion and his impression, without pretending to summarize the opinions of everyone here. He will talk for some 15 or 20 minutes. Then we will have some discussion; and finally I will say a few words of conclusion.

If you don't mind, we will start by asking Calogero to present this kind of final report on the School.

CALOGERO: In these two weeks we have been listening and discussing for approximately 50 solid hours. It is now my task to summarize in a few minutes all that has been said. I can only try to recall the topics which were discussed to those of you who have been present here all the time, and to provide just a short glimpse of them for those of you who are here today, but have not attended the School. After giving this short summary, I will add a few remarks as a first contribution to our round table discussion.

I will divide the topics we have been dealing with into three main areas: all those topics which define the general framework and the theoretical foundations of the problems we are trying to deal with; those contributions which have provided the facts more directly relevant to our central interest - Disarmament and Arms Control; and finally, those contributions which have dealt directly with the present technical and political problems of disarmament, of peacekeeping and peace making. I think this division is just as bad as any other, but it may nonetheless provide some sort of a guideline.

In the first group, I put the two lectures by Prof. Markovic on the ideological conflict between East and West and on the role of scientists in reducing international tensions

and in fostering peaceful coexistence (of which as Prof. Markovic and several others remarked, our meeting is just one more example; in fact, if I may voice the invidious point of view of someone who was in the unfortunate position to be too close to his working place to be unable to forgo it completely, and who has, therefore, spent the best part of these two weeks commuting between here and Rome, it seemed to me that the life of the participants to this School was not only an example of peaceful coexistence, but in fact, an example of peaceful existence)

In this same group of, let us say, "framework contributions", I would also put the four lectures by Prof. Roling, who provided us with an acute analysis of the nature of war, of its causes; of the problems of the prevention of war - which coincide certainly, at least in the long run, with those of the elimination of poverty and injustice on a world scale - and of the theoretical and methodical problems confronting all people of good will who wish to do something in this area, namely the problems of peace research. In this same group I would also put yesterday's lecture by Prof. Stonier, on the social prerequisites of peace; and the lectures by Prof. Arangio Ruiz and Prof. Sylos-Labini, who have analysed with great stringency and competence the interaction of disarmament, respectively, with the legal and economic spheres; although I should also point out that both these contributions, for their topicality, are certainly no less relevant for the immediate and concrete problems of disarmament than for the general framework. Finally, I would like to mention as one of this group the lecture given by Prof. Burkhardt, who, in his capacity as Director of the Science Division of UNESCO, described an institution which provides a concrete and

successful example of international cooperation and aid to the developing countries.

Let me now move to the second group, namely the one dealing with the facts immediately relevant to the disarmament problem. Here, of course we have had the "unpleasant" lecture by Prof. Stonier on the short and long term effects of nuclear weapons and nuclear wars. I'm sure he will forgive me for the use of the adjective, which is aimed to the argument and certainly not to his brilliant and terse presentation. He reminded us of the fundamental reason why we are all here: the obnoxious destructive power of nuclear weapons. Let me say, at this point, that in my opinion, it is not easy to really grasp the actual significance of the facts and figures which Prof. Stonier gave us. In fact, it is quite likely that a mechanism of self protecting mental hygiene is at work here. For instance, even among experts there is a psychological tendency to downgrade the whole thing - to give an example, it was noted that even experts tend to think of a kiloton or a megaton as the energy corresponding to one thousand or one million Kilos of conventional explosive, instead of the staggering and, in fact, very hard to realize, actual figures, which are respectively one thousand and one million tons of TNT.

In this second group I would put the three lectures by Prof. Bjørnerstedt, who has provided us with the insight of the expert on the difficult problems of modern strategic thinking, and has shown us the great complexity and ambiguity which lies behind such apparently simple concepts as, for instance, "national security".

Finally in this group I should mention the Round Table Discussion on Civil Defence and on the connected problem of Antiballistic Missiles, which was led by Stonier, Bjørnerstedt and Friis Møller.

Now, I come to the third group of lectures, which focussed mainly on the current political and diplomatic problems of disarmament and arms control. There the groundwork was

laid by the contributions of Mr. Epstein and Prof. Lapter. Mr. Epstein brought to bear his unique experiences as Chief of the Disarmament Section of the United Nations, presenting a detailed and illuminating history of the disarmament negotiations, and also of the peacekeeping and peacemaking activities of the United Nations. Prof. Lapter discussed the approach to disarmament negotiations, giving a balanced appraisal of the political difficulties; and he analysed, in particular, the role and the motivations of the smaller powers. This groundwork laid by Epstein and Lapter put us in the best position to listen to the precise and clear presentation of the Western and Italian point of view on the disarmament negotiations as it was given this morning by one of the main protagonists at the Geneva talks, Ambassador Cavalletti.

Finally in this group I should mention the lecture given by Prof. Stonier on the problem of inspection and controls, with some participation by Dr. Grayson, from the U.S. Delegation at the Eighteen Nation Disarmament Conference at Geneva; and the Round Table Discussion on the Main Problem of European Security, which was led by Drs. Cicanovic, Korsgaard-Pedersen, Niezing, Schulze and Prof. Lapter, and which kept us in discussion for more than five hours!

This completes the summary of the arguments treated in the lectures - but I should immediately add that this survey, by focussing on the lectures, gives an inadequate and insufficient idea of the actual proceedings. These were characterized by the fact that each lecture was followed by a discussion, which usually lasted more than the lecture itself, which gave as a rule, rise to a display of as high a level of competence and insight as the lecture itself, and which often touched on many other problems besides delving more deeply in to those treated by the lecturers.

This last point introduces the second part of my talk, in which I would like to

put forward a few remarks as an introduction to our discussion on how the School has functioned.

First of all, concerning the format of our sessions, I believe that the initial decision, taken by the lecturers, to have only three lectures per day so as to leave more time for discussion, has proved itself a very sound one. It also seems to me that the decision to organize Round Table Discussions turned out to be a very good one; in fact, the two discussions on Civil Defence and European Security have been so interesting that I wonder whether we should not have had some more such sessions. Although it should be said that the discussions after each lecture provided ample opportunity for everybody to intervene, so that, in fact, there was really not much difference between the Round Table sessions and the normal lectures.

A second line of remarks has to do with the people who have attended the School, both as lecturers and as participants or observers. It is not my task to go into the vital statistics, which will be dealt with later, I think, by the Director of the School. I would, however, like to put forward two remarks, which might be of some relevance. The first one provides me with the opportunity to find fault with the School as I was feeling bad up to now by pouring out only laudatory remarks; and the fault is that in spite of the very large international representation, three very important nations which are relevant to the disarmament problem are not represented here, namely the Soviet Union, France and China. I can, however, state as a matter of course, that this was neither due to a decision nor even to an oversight of the organizers, but merely to the lack of response.

A second observation concerns the fields of interest of the participants and their direct involvement and competence with peace problems previous to their coming to the School.

As regards to the first point, I would like to draw your attention to the interdisciplinary character of the School, also noting that practically at no time was this an impediment to our mutual understanding; and also to the ratio between the number of participants having a background in the natural and in the humane sciences, a ratio which has turned out to be more balanced than is usual in Pugwash Conferences. As to the level of previous involvement in peace research of the participants - others, of course, than the lecturers - it seems that we had an almost equal balance of people for whom this was the first systematic experience and people who had been previously involved in this kind of activity, either professionally or as amateurs. This "mix" proved a very convenient formula, to keep on a high level the discussions avoiding at the same time the often trite arguing among the so-called experts who already know all the answers to all the questions and who are therefore basically uninterested in discussing. This mixed character of the audience - which, as a matter of fact, did not correspond to a preconceived formula but rather evolved as an Act of God - was also to a certain extent, paralleled by the character of the lectures, some of which had a more systematic and didactic approach, assuming very little previous knowledge on the part of the audience; while others started from a more advanced level and were rather conceived as a basis for a somewhat sophisticated discussion. I think it would be very useful to hear your comments on this point.

Finally, I would like to inform you of a discovery which I have made, namely that gloom breeds humor. Obviously a proof that there must be something in the dialectical vision of the world! In fact, while it cannot be denied that many of the topics we have dealt with are not in themselves of a particularly humorous nature I think I never heard as many funny stories as during the past two weeks. I see at least one good point in this,

namely, if we succeed in writing up the proceedings of the School, we will have a good market for them, at least as a collection of funny stories. In fact, funny stories of a rather peculiar kind - in the nature of black humor. This tendency to laugh away at our worries, lest they become nightmares, reminds me of the story of the good old lady, who was walking one evening in a dark street, when she found a man lying in a pool of blood, with a knife sticking out of the middle of his chest, but still alive. The good old lady rushed to his side and asked him: "Does it hurt very much?", and the man answered: "Oh no, only when I laugh".

Before closing I would like to say in addition just one more word on the purpose of the discussion which we will now initiate. As you may know, there is no decision as to whether this experiment - because, as Prof. Amaldi pointed out in his opening speech, this School has been a new experiment - should be repeated or not. All we know is that there is no plan to repeat it next year. In fact, as Prof. Amaldi pointed out, we will probably be in a better position to judge whether to repeat the School or not, say, one year from now, after the publication of the Proceedings.

However, quite independently from the problem whether the School will be repeated or not, I believe that a discussion on the best way to organize a School of this type - a discussion based not on theoretical schemes but on actual experience - once it gets published in the

Proceedings; will in itself represent a relevant contribution to peace research, since many similar projects may and will presumably be undertaken in the near future in many parts of the world. And incidentally, the possibility to give this contribution is now open to all of us - even, or perhaps I would say, especially to those who have up to now only been listening.

SOCIAL PREREQUISITES TO DISARMAMENT

By Prof. Tom Stonier

23/6/66 11:30

INTRODUCTION

The title of today's lecture is: "Social prerequisites to Disarmament", and I think I should start by defining what I mean by "prerequisites". I will do so by employing two examples from studies on the behaviour of animals. These studies involve questions that have been bothering biologists for some time, namely, are certain complex behaviour patterns exhibited by animals learned, or are they instinctive? And as so often is the case, it turns out to be both. For example does a female rat raised in isolation - one which has never seen another rat - build a nest just before it gives birth to a litter, and is it able, instinctively, to recover its young when they are removed and bring them back into the nest? The answer is, that if you raise a female rat in isolation she will both build a nest and she will pick up the young if they are scattered around. But there is a prerequisite for this behavior, namely: the rat must have had the experience of transporting material. If, for example, instead of having shavings, the floor of the cage is covered with sawdust, and if instead of feeding pellets, a powdered form of food is fed, so that the rat never has a chance to learn how to transport anything, then under these conditions she will neither build a nest, nor know what to do when the young are scattered. This is one small example of how certain conditions must be fulfilled before a complex behavior pattern can become established. Another example relates to the question of how the cat knows or learns to hunt. Does a cat reared in isolation know how to catch a mouse, or does it have to watch other cats? Again the answer is: it doesn't have to watch other cats; it becomes a hunter even if raised in isolation. But there are two steps that must be learned first: The cat must learn to chase moving objects; and the cat must taste blood. In nature cats normally encounter both these prerequisite stimuli. There are always things running around, from insects to mice - and sooner or later when they catch a mouse, they will taste blood. From then on they are confirmed hunters. It is possible to alter this behavior. For example, if you give an electric shock to a kitten every time it starts to chase something, it very quickly stops chasing things, and it never becomes a hunter.

You can put such a kitten in with a litter of mice and it won't chase them. So this is what I mean by prerequisites; and I think there are analogous social prerequisites which govern the complex behaviour of any given society.

PREREQUISITES TO WAR

Before going into what might be called the prerequisites to disarmament, let us look at some of the prerequisites to war. The most obvious prerequisite is that a country must have arms. If it has no arms--if we are successful in our collective efforts and total disarmament becomes a reality--then presumably there can be no war. There are other factors, however; for example; two countries could be armed to the teeth, and still never go to war for some other reasons. Some are trivial reasons, for example, geography; it's highly unlikely that Switzerland and Uruguay would wage war--they are so far apart, and there is no common boundary and no chance for a serious conflict of interest. Of course, with bigger nations there are much greater chances because even the ocean becomes a common boundary. Space could also become such a boundary, so that the chances for war do not merely reflect the geographical distance, but also the technological competence which can negate distance. On the other hand, it is possible to have two countries, both armed, with a very large common border and yet have the chances for war remain extremely low. The United States and Canada share one of the largest common boundaries, and yet the chances of these two countries going to war are pretty low, even though both have arms and even though they have conflicting interests. Every time the United States gives wheat to India there is a conflict because Canada would like to sell its wheat; and certainly in terms of the cold war the Canadian position has frequently been very different from that of the United States. So there are sources of conflict and yet the chances for war are extremely low. I think this reflects a variety of historical accidents including the fact that both countries developed primarily after the development of the modern means of communication and transportation. The result has been a great uniformity - one can find in New York, in Los Angeles, in Toronto, the same hamburger stand, gasoline station, motel,

drugstore, radio stations, main streets, etc. A common culture, hence a sense of common community has evolved, and this, plus a treaty which prohibits fortifications along much of the border, and the ability of people to move across without a passport all this reflects the fact, and in turn reinforces, the mutual trust and stability which have characterized U.S.-Canadian relationships. Thus, here is a kind of social condition which makes it highly unlikely, not impossible, but highly unlikely that war would brew out between two countries such as the United States and Canada.

It is possible to construct a spectrum of probabilities in relation to armed conflict. The probability of war between the United States and Canada is very very low. The chances of war between the United States and England are perhaps a little bit higher but are still very low. The probability of war between the United States and other members of the North Atlantic community are somewhat higher: we have recently seen increasing conflicts of interest with France. And as one goes to Eastern Europe and to the Soviet Union, the probability of war increases because there is neither a mutual tradition, nor a mutual harmony. At the moment, the probability for armed conflict is greatest between the U.S. and China. Of course, superimposed on the cultural differences are other factors, such as military or economic power, ideological conflict, and conflicts of interests. But it should be emphasized that a sense of common community diminishes the chances for war, while a feeling of differences results in the "we/they" attitudes which make possible lethal group conflict.

Let us put on the board a diagram of an iceberg: If we consider disarmament as a part of government policy, then that is the part that shows up above water. As we all know, the part of an iceberg that shows above water is only a very small part; what's underneath is more important. In our iceberg analogy, underneath is the society with all its values, norms and attitudes; and this, of course, is built on top of human needs, so that we have different levels of political, social, cultural, and biological factors. Sometimes, people

are heard to say: if you could only make the governments do something But you can no more make governments move than you can push icebergs. It is possible, but it takes a lot more energy than one thinks. If one moves in the direction of war, for example, what must happen underneath, involves activating attitudes of hostilities, misapprehension, economic or physical need, and to some extent, greed (although, I think, for modern industrial nations this is becoming less and less a real factor). In the 20th century, the distorted perception of the situation, and the distorted perception of the opponent, probably have contributed more to international conflict than anything else. And such distortion seem to become automatically superimposed on the reality of certain historical experiences.

Let us consider a few examples to illustrate attitudes based on relatively recent historical experience. At this conference we have discussed problems of European Security and speaker after speaker expressed fear of a resurgence of German power. This clearly reflects the unhappy fate that befell Europe about 25 years ago. Note that actually the height of German military power and aggression is now almost a quarter of a century behind us just about a generation ago yet it still stirs such grave concerns. It is apparent that the "lesion of Munich" is also still uppermost in the mind of American leaders when they view what to them is communist expansionism in South-East Asia.

Just as the attitude not to compromise derives from the experience of the inadvisability of compromising with Hitler in the late nineteen thirties, so probably did Chamberlain and Daladier come to Munich much more inclined not to be inflexible and instead ready to compromise, since they had witnessed a quarter of a century earlier the blood bath that resulted from the insistence on "honor" and the unwillingness to compromise in 1914.

The East-West conflict too, rests on real historical events. For example, the American interventions in Russia in 1918 and in Viet Nam today, on the one hand, and the Soviet attack on Finland, in the nineteen thirties, and the post-war events in Czechoslovakia, Korea, and Hungary, on the other, all have led to intense feelings of hostility.

However, there are other forces at work which further aggravate hostilities by distorting the reality of the situation. Foremost among these is the fact that two parties in conflict fail to look at a situation symmetrically. In 1956, while the United States was agitating in strongest possible terms for free elections in Eastern Europe, it was in effect sabotaging free election in Viet Nam, and has in fact, never admitted publicly that its support of the Diem regime resulted in preventing the elections that had been promised by the Geneva accord of 1954. Similarly, the Soviet Union would not admit that the 1956 revolution in Hungary was by the very people that ought to support Communism; instead it branded the revolutionaries as "fascists" and justified its own military intervention on these grounds.

It is interesting to look at some of the studies done by social psychologists on group conflict in a boys camp. When the camp was split into two groups and various incidents created the experimenters between the groups, the boys were always willing to rationalize the actions of their own leaders, and roundly condemn the same actions when committed by members of the opposing group. Thus members of one's own group are always thought to act with the best of motives such as group loyalty, to help others, in defence of some principle, etc., while the same action by members of the opposing group tend to be associated with motives that are sinister and evil.

This matter of attributing utterly evil intentions to the other side was seriously reinforced at the international level by the experience of Nazi Germany. The rumors of horror circulating during World War II (unlike those of World War I) turned out to be founded in fact. This has furthered the development of an attitude during the twentieth century which condones the utter destruction of an opponent's society. Unfortunately, this is the very prerequisite that permits considering nuclear war as a serious possibility, and may yet prove to be the most tragic legacy left by the social pathology of the first half of the twentieth century.

It is true that the utter destruction of the oppo-

nent's society was started in earlier times--one need only recall the fate of Mesopotamia at the hands of Hulagu Khan. But such total destruction was not considered valid at the beginning of the twentieth century. What happened to Western Civilization during this century appears to involve an "escalation of brutalization" (to use a term coined by Fromm and Maccoby) made possible by a multitude of technological advances: gas warfare, aerial bombardments, the concept of warfare as envisioned by Giulio Douhet, i.e. blitzkrieg tactics, etc. Think of the evolution of technology associated with the following series of aerial bombardments: Guernica, Rotterdam and Coventry, Hamburg, Dresden and Tokyo, Hiroshima and Nagasaki... Now go over the list again and review public attitudes: From Guernica to Tokyo we find increasing public acceptance. Only the advent of the mysterious atom bomb shocked public sensibilities although the number of deaths in the atom-bombed cities were very much less than those of Dresden and Tokyo.

This escalation of brutalization appears to be continuing. In the current Vietnam conflict the use of phosphor and napalm is condoned by the majority of American citizens, even though they can in no way be considered a brutal people or at least more brutal than other peoples.

Part of the acceptance of the use of terrible weapons in Vietnam by the American public stems from an ignorance bred by remoteness from the actual scene of events. However, ignorance is probably only partly responsible for the apparent callousness of otherwise decent people. To the western conscience, the acceptability of both war, and the horrors of war, has increased, not decreased during the twentieth century.

PREREQUISITES TO WAR

It is for these reasons that one may state that the prerequisites for nuclear war has been met. The stage is set. The question now is, can one reverse the trend? Can the trend be reversed to a point where nuclear war is not possible? Can one reverse it even further, so that it is not

possible to have war at all? Of course, the purpose of the discussions here in Frascati is to seek ways to do just this since one of the prerequisites for "armed national conflict" is armed nations. And universal disarmament would mean ~~that~~ nations would not be armed.

A closer analysis of what we have said in the preceding paragraph suggests an alternative approach, that is, to remove the other prerequisite to "armed national conflict", namely, the existence nation states. For a disarmament conference this alternative should be considered most carefully, since in any case, disarmament will occur only as nations transfer both their sovereignty and their security to an international government that they trust.

How does one achieve an international government that individual nations trust sufficiently so as to surrender both their sovereignty and their military defense establishment? One can consider at least three approaches:

- 1) The creation of a plan for an international government so ingeniously thought out to induce a sufficiently large number of nations to submit to it. This might be called the quick cure, and tends to be subscribed to by some more legalistically orientated persons.
- 2) The evolution of society based on an improved communication and transportation technology which creates a "one world" feeling in which loyalty to the state loses its importance, and in which attitudes favoring the establishment of a world government are created instead. This is the long-term solution which will happen automatically if the world is able to avoid a nuclear disaster long enough.
- 3) We come to recognize the phenomenon of war as a form of social pathology and begin a massive expenditure of thought and money with a view to understanding this phenomenon and ultimately preventing it. At the moment it is difficult to obtain the money, but the world intellectual community is perfectly capable of furnishing the massive intellectual resources which could analyze the phenomenon of war, provide new data and insights, and contribute a basic set of hypotheses which could guide research in the various critical areas.

At the moment the peace movement is seriously handicapped by the lack of a general theory of peace. The peace movement, at least in the Western countries, can only rally around a crisis, such as fallout from weapons testing, or more recently, Vietnam. When there are no specific issues, the peace movement atrophies.

The reason that there is no general theory of peace is because the phenomenon of war is not understood. This does not mean that forces leading to war cannot be understood, nor that such forces cannot be controlled once they are understood. In fact, it might turn out, that there exists a requirement for war that is not currently recognized, which could be readily blocked. Just as certain pathogenic microorganisms have "weak points" in their metabolism which can be blocked by the simple administration of certain drugs, so may there exist a relatively simple technique, acceptable to all governments which could greatly reduce the chances for war.

It is more likely however, that the solution to war lies not in the creation of a simple technique, analogous to a "miracle" drug, but involves a much more difficult and sustained effort, more analogous to current research efforts to research and cure cancer. This would involve the creation of new social institutions, including an increasing number of peace research institutes and a massive infusion of discussions of the problems both into the technical literature, and into the formal curricula of our educational institutions.

War is a social institution, not an intrinsic part of human nature. At least there is no evidence that war, per se, is an attribute of man. However, a tendency for group conflict is present in numerous species and is probably very strong in man. Such conflict emotions probably relate to the phenomenon of territoriality, and perhaps other biological forces including man's love of adventure and excitement, the struggle for status in a hierarchy characteristic of many social vertebrates, and perhaps other, as yet undetermined biological forces genetically programmed into our emotional responses by the process of natural

selection. Nevertheless, if participating in group conflict is an emotionally satisfying experience, this does not necessarily mean that such conflict has to be lethal. Most men never go to war, and war as an institution is unknown in certain cultures. The emotional requirements are probably well satisfied by participating in a group sport such as soccer, or engaging in non-lethal group conflict, as in a political campaign.

If war is considered a social institution, then we might consider the fate of another ancient, and until recently, widely practiced and revered, social institution: slavery. Slavery was considered part of the natural state of affairs until about two centuries ago. In 1783, Denmark first abolished slavery. Other countries followed suit, as slavery became more and more anachronism in an increasingly industrialized world. Finally in 1963, Saudi Arabia completed the process and abolished slavery by law (although it still persists in practice).

In the United States the formal abolition of slavery was associated with a most bloody crisis, and it took Americans a century to realize that the abolition of slavery was only part of a much more complex problem: the relationship between races. It is also instructive to note that profound changes in social attitudes concerning race relations have rapidly taken place in the last two decades, particularly in the negro community, where attitudes of utter futility and hopelessness have given way to a self-image and a vigorous challenging of the white power structure. Perhaps the attitudes held by the vast majority of negroes prior to the civil rights movement concerning the possibility of changing a very undesirable social order, is analogous to the current prevailing attitudes about the inevitability of war.

Thus we see that one of our most important tasks involves changing attitudes. This means that one must first understand which attitudes impede progress, and which help it; what is the basis of these attitudes; and what techniques are at our disposal now, and may be developed in the future, for transforming these attitudes.

Attitudes which obviously impede man's progress towards peace take a variety of shapes: Among them is the

all-pervasive pessimism that man has always had wars; therefore always will. Even more detrimental is the blind nationalism which insists "my country right or wrong", and the snobbism which associates a country's greatness in terms of its military power. Fear of another country, xenophobia, and general mistrust, as we are all aware, greatly destabilizes international relations and inhibits the development of a sense of world community. So too does the development of militant doctrines and ideologies which insist on a monopoly of truth, be it political, economic, social or theological.

To change these attitudes we must become involved in education at all levels. From mass media, to parents teaching their children, to formal education. History and geography textbooks need to be written so as to avoid the unrealistic view, small children get of their country and the world. The impressions we gain in childhood frequently dominate us for the rest of our lives. In higher education college curricula need to be revised to include formal courses on peace.

All channels of international communications need to be expanded. This includes trade, tourism, cultural exchanges, international radio and television shows, and massive student exchanges.

In addition we need to create new social institutions which include the formation of an increasing number and diversity of peace research institutes and international educational centers (such as this one at Frascati), and the continued building up of an international infrastructure at all levels of society. The components of this infrastructure include such mundane organizations as the postal system, and the international banks and other commercial institutions, the many international societies of professionals (this is especially useful when they carry out projects like the International Geophysical Year), and of course, the growing number of agencies of the United Nations.

It is steps which link people of different nations to each other in a variety of mutually beneficial activities.

which will develop that sense of world community which will make warfare between two nations as implausible an action as warfare between two cities seems to us today. If ancient bloody rivals such as Genoa and Venice, today live happily within one country, why not tomorrow, America and Russia in one world?

CONCLUSION

1. Fruitful disarmament negotiations at Geneva will not occur until the delegations will have been appropriately instructed.
2. Such instructions will not be forthcoming until changes in existing governmental policies will have occurred.
3. Such changes in policies come about only following changes in perception and attitudes on the part of the leaders involved.
4. Changes in attitudes are dependent on complex social processes not yet fully understood.
5. Some of these social forces have been examined and the picture that emerges is that a prerequisite for general and complete disarmament is the development of a sense of world community, with all the social, political, and legal institutions that derive from this sense.
6. The evolution towards such a world community is well on its way as a result of contemporary technology, and may be much more rapid than is generally recognized. A conscious effort, to understand and accelerate this process should be one of the main goals of the peace movement.

INTERNATIONAL SUMMER SCHOOL ON DISARMAMENT AND ARMS CONTROL

c/o Carlo Schaerf

L.N.F. - Cas. Post. 70

FRASCATI (Rome)

Italy

March 11, 1968

Dear

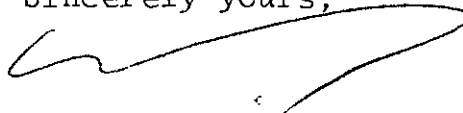
Enclosed you will find the final part of the proceedings of the First Course of the International Summer School on Disarmament and Arms Control. This part consists in several completed discussions held after the lectures.

As you know, all opinions expressed in these informal discussions are purely personal and do not represent any official opinion of the organizers of the School or the organizations to which the person belongs.

As we have already mentioned in our previous letters, we would greatly appreciate your sending us any comments you may have and informing us of the eventual errors found in the texts.

Thank you for your very kind cooperation.

Sincerely yours,



(Carlo Schaerf)

Encl.

/aa

DISCUSSION Following Markovic: Ideological Wars and
Peaceful Co-existence.- 22/6/66 - 16:00

AMALDI : I have listened with great interest to the lecture of Prof. Markovic and in particular I liked the remark that the two groups of countries, the socialist countries on the one side and the western countries on the other, in spite of the great difference between their basic ideologies, are in some way forced to move one towards the other. In the Western countries the State has a continuously increasing role and takes over more functions and responsibilities, while in the Socialist countries the emphasis on market economy and personal property is gradually gaining ground. It may be that the facts of the human species life force gradually on all groups, irrespective of the ideology initially adopted, such a process of convergence, with the result that, from a certain moment, the difficulties connected with the defence problems become less important.

But apart from this remark of a general nature, the validity of which will be recognized or denied only by future historians, I agree very much with Prof. Markovic on the urgent need for clarification of the same measuring of the words. From your speech it appears clear that different people attribute different meanings to words such as ideology and co-existence. If, for example, some people claim from the start, that different ideologies can not and should not exist in the same world then the situation is really hopeless. Either ideologies become less and less important as a matter for which one is ready to fight; or one has to immediately start a big fight and go on until one single ideology can be imposed by force from one group of countries on all the others. I certainly do not like the second solution, which from both the human as well as the philosophical point of view, looks extremely primitive.

MARKOVIC There is a certain confusion about the use of the term "ideology" and consequently about the meaning of the expression "ideological co-existence".

The term "ideology" is being used in at least two senses. According to one, ideology is a project of future, a value orientation of a large social group (class) and it might be more or less rational and compatible with

science depending from the social position of the group in question. According to the other sense, ideology is a false, inadequate picture of reality created by an exploiting class in order to rationalize and justify its interests.

It follows, then, that the concept of ideological coexistence is also ambiguous. In fact, there is an additional ambiguity of the term 'co-existence' itself. Does it mean elimination of any fighting on ideological issues or only the elimination of certain dangerous forms of ideological fighting with the preservation of active confrontation, discussion, mutual criticism and challenge? Also, does it refer only to a limited historical period, while the world is as it is - full of sharply conflicting interests, or is it a principle which assumes permanent preservation of status quo and consequently forbids any action which might modify the world in such a way that, as one of the consequences, the very confrontation of hostile ideologies would disappear?

To me "ideological co-existence" means, in the first place, a requirement to change the methods of ideological struggle, to eliminate aggressiveness and dualistic, black and white thinking, to give up all those emotionally loaded beliefs which are neither true to the facts nor to the genuine long term needs of a class, or a country. This would not exclude the temporary existence of both types of ideologies nor their mutual struggle. However, ideological co-existence in this sense would not be incompatible with an active struggle to change the social and political structure of the contemporary society so profoundly, that ideologies in the second sense would disappear. The struggle between ideologies in the first sense would take the form of philosophical, sociological, ethical and other discussion and criticism.

However, the term "ideological co-existence" is not popular in socialist countries, even among scholars, simply because "co-existence" in this context is usually being wrongly associated with passivity, softness, lack of initiative and, in general, readiness for compromise

with the doctrines advocating wrong, inhuman, and unjust ideas. Under such interpretation, I would also not accept the principle of "ideological co-existence", nor probably would any of you. However, I don't see any justification for such an interpretation. Why should co-existence" in this context have a different meaning than in the context of politics where it implies all sorts of struggles which ~~don't~~ lead to military conflicts, and tensions; and are compatible with at least a certain minimum of communication and collaboration?

Nevertheless, there is no use quarrelling about semantical habits. The only fruitful approach is to get familiar with them, to appreciate them and to take care of translating whatever one hears and wishes to say from one conceptual apparatus to the other. In this case if we describe what we mean by "ideological co-existence" in a language understandable to a Russian or to a Hungarian, there is a good chance that we might agree.

And this is the only thing that matters.

AMALDI I would like to go back for a moment to the ideologies that divide today our world. It is quite clear that to speak of "two ideologies, the Marxism and the liberalism is a drastic over-simplification of which I am fully aware. Each of the two, and especially the second one indicates a very large number of lines of thought which are very different and some time even in open opposition. This point, however, is irrelevant for the remark that I would like to make now. These two ideologies can be defined as theories of the human society, or at least of some of its aspects; and as such they have been discovered (or invented) not much more than one century ago. I am always astonished to find out that many people believe in one or the other of these theories while we know that physical theories have usually a much shorter life.

How can people believe that general principles written down in a certain historical situation can constitute a solid basis for interpreting all future historical phenomena, is for me not easily understandable.

No physicist would have much faith in any of the theories that he is used to applying, and physical theories have certainly much more solid grounds than social or political theories since the latter can not be tested by "clear experiments" as we can do with physical theories.

I agree completely on the fact that people who have different ideologies should discuss and try to compare the consequences of the different points of view. What I find irrational and not understandable is that people can take so seriously their own ideology and hate so strongly the followers of a different one, to arrive at the point of making wars. A war affects the life of many people while an ideology is always, unavoidably based on very provisional and shaky grounds simply because our scientific knowledge of a simple human being and even more of an "ensemble" of human beings as complex as a society is really still very poor.

LAPTER Everybody wants to get all the information on the outside world so as to get a complex picture of reality. But we could never accept and properly analyze all the information that is available from the changing world. Therefore the picture of it is necessarily distorted. How far is it distorted and how much could this picture of the world outside be improved by poking into reality, this is the question.

May I mention another expression of Rose Luxembourg, which is more to the point. She stated, in one of her early writings that ideology, just because it is an ideology, pictures the reality at the time that it was formed; and you cannot change ideology with every change in the ever changing world just as you change your shirt, to have a new one every day. Therefore every ideology is to some extent conservative, static. It is to some extent out-moded immediately or a day after it was conceived. Therefore it is necessary to probe every day anew every aspect of ideology to ascertain how far it is away from the changing reality, so that you can bring it back there. And you have to do it, to change some details or even some tenets of your ideology if you want to preserve the scientific word out-look, if you believe that your ideology is a scientific one. Perhaps this could

lead us to the problem of ideological war. Here, as usual some problems got mixed up, because in talking about incompatibility of various ideological views, we usually think on extreme differences; humanistic Weltanschauung is certainly incompatible with the fascist Weltanschauung. We should face the fact that they cannot live together. But ideological differences could be solved only by ideological means, and not by annihilating those who are carriers of the given ideology. But there are certainly major or smaller ideological differences even among one philosophical school, for instance among marxist, still more you will find those differences among the people who have various ideological schools of thought. All these could not disturb our cooperation on each and every major problem of today and tomorrow, especially if we will not spend too much of our time on scholastic brain splitting.

It seems necessary at this point to introduce some clarification on the problem of peaceful-coexistence and war. It seems to me that it is possible to see the problem of peaceful co-existence as an ideology leading to a policy of not allowing the war to be unleashed; and if is possible to look upon peaceful co-existence as on a situation, that either exists, or doesn't exist. Policy and reality, these are two different aspects of peaceful co-existence.

Why this differentiation? We are having a state of no-war-with the exception of Viet-Nam, and I agree that this is a formidable exception. But still, we most of the countries of the world, especially European ones live in state of peace even with all sort of ideological differences and conflicts. There is no war between capitalists and socialists countries. This means that there exists a peaceful co-existence, as a description of the situation: NO WAR.

This situation is to be very clearly differentiated from the political cries for a war, from war-mongering. The war-mongering is usually done during peacetime, it is dangerous, it has to be stopped, it could lead to war, but it is not a war.

It is important to define these two kinds of meaning of the phrase "peaceful co-existence", because if you mixed them up, then you will get some sort of an ideological war and then through all kinds of psychological, economic and any other kind of "wars" you will land into a shooting one.

Therefore it is necessary to have a sharp distinction between the "no-war" and "war". It is practically a problem of quantitative differences.

Then to the one question on the possibilities of continuing some sort of a competition and cooperation between ideologies, a continuous struggle for the souls not to captivate but to enrich them. Whether we wish it or not, different people have a different picture of the world, sometimes a clear one, sometimes often muddled and full of inconsequences. There have been many such cases. So let us do some competing among humanistic ideologies and perhaps to do some selling and buying in this elusive commodity.

At the same time, however, let us, people with humanistic ideology, fight hand in hand against anti-human ideologies of fascism or various or any kind of reaction.

MARKOVIC To the comment that the Indian concept of co-existence is entirely different from those of the communist countries, I must mention the fact that the great leader Nehru was very much in agreement with the leader of a communist country, Yugoslavia, as far as the concept of peaceful co-existence is concerned. The concept of co-existence is not very different from that one which we accept in Yugoslavia.

CORRADI Mine is a rather short and technical question I am referring to the term "ideology" in the second sense you specified. My question is: Since we do have ideologies, I presume that they fulfil a function or they satisfy a need or a range of needs.

I would like you to comment on this function and on the needs that they satisfy, from a philosophical point of view and, if you can, I would like you to introduce a psychological dimension as well.

My second question is linked to the first: since we cannot do away with ideologies, we have got to live with them, just as we have got to live with aggressive and fanatic instincts, what would be required in order for us to be aware of the fact that we do have ideologies; I think this is a primary necessity in order to control them.

MARKOVIC It would be very interesting to say more about the psychological dimension of the concept of ideology in the second sense, and I think everybody would be very grateful to you if you would say more about that. It is obviously connected with the problems of the rationalization of certain unconscious desires, needs and urges, so here psychology has a lot to say.

As to the second question which is very important at this moment, I think that the first step would be very active engagement in critical analysis and reappraisal of existing ideologies and an effort to show that certain elements of existing hostile ideologies especially black and white dualistic thinking, lead to the lack of tolerance, to aggressiveness and the impossibility of any communication.

The second step is already the discussion and competition among existing ideologies. This is no longer the ideological war, but a natural consequence of the existence of social groups which have clashing interests. Ideologies are the expression of such interests and consequently an inevitable part of this world. The problem therefore, is not the elimination of ideologies but the rational analysis and criticism of all elements of existing ideologies which really cannot be justified by existing facts.

Another very important element is whether people who live in the West and in the East can find a common language when speaking about ideologies in such a rather late stage of development. Now it is very interesting that in this paper "2000 year project, was distributed here today, there is this passage at the end: "Peace is not the only value in this world; there are other values such as equality, justice, abolition of exploitation, abolition of alienation, development, freedom from fear, freedom from want, freedom of action and so on." You see a very rational discussion is possible here on such issues as: whether we accept those values, what we mean by them, whether we can make these concepts more operational, what they mean in terms of human behaviour and whether they correspond to certain tendencies in the development of human society. In this case, there is the possibility of rational discussion like any other theoretical discussion in science and philosophy and this is essential for what I meant by ideology in the first sense. There must be different orientations, different goals of different communities, and the problem is whether they are compatible with the facts, with the genuine needs of people, and with the existing trends of social development or not.

AMALDI I think that today we have worked almost eight hours, and therefore it is time to close our session.

I thank Prof. Markovic again and all those who took part in the discussion.

DISCUSSION FOLLOWING EPSTEIN :

THE UN AND PEACEKEEPING - Tuesday, 21/June/1966

11:30

BERTOTTI: I would like to know your opinion about the following problem. Do you think that this very valuable experience of the United Nations peacekeeping forces will be useful when one comes to the problem of providing guarantees for a certain power which has the possibility to acquire nuclear weapons.

EPSTEIN: There are two answers to that. On the one hand, many of the non-aligned countries say they don't like the idea of big power guarantees, because big power guarantees can compromise either their non-alignment or even interfere in their internal affairs. They say that the United Nations peacekeeping abilities should be strengthened. Others say that they might be threatened or subjected to a nuclear or even a conventional weapon attack by the time the United Nations peacekeeping operation got going and hence a UN security guarantee would be a "post mortem guarantee". Those are the two aspects of the question. But unless you can give a country some credible assurance regarding its security, it is going to be very difficult for a country threatened by a hostile neighbor to agree to give up what it correctly or incorrectly regards as something which could strengthen its security, at least in the sense of providing it with what it regards as a deterrent against attack. Just as some of the great powers have argued that they must have nuclear weapons as a deterrent against attack, even though they know that by developing nuclear weapons and by the continuation of the nuclear arms race they create conditions of insecurity in the long run, so some non-nuclear powers may think that in the short run nuclear weapons might ensure their survival. The problem of security guarantees is a very difficult one.

MARKOVIC: Granted that the United Nations have been successful in peacekeeping, I would like to have a little discussion about some fundamental problems of peacecreating which are also relevant to all discussions we had on international law.

You said you do not know any sound basis to establish what is and what is not justice. This really is a problem because as a matter of fact there are extremely great differences in the concepts of justice on both sides and in

general among various social groups and individuals. However, the alternative is: either we give up hope of establishing at least some internationally accepted elements of the ideas of justice and morality (and in that case I think we may safely say that nothing can be reached in international law, not to speak of world government) or there must be some ways to establish certain common denominators and to reduce these very great differences. Don't you think perhaps, that a more rational, scientific approach to such a problem could give at least some small results at the beginning.

Would you say that a certain progress can be made by the study of the great humanist tradition (which is in the basis of all present day culture and civilization) by a scientific study of public opinion, etc. It seems to me that non-aligned countries would be able to contribute considerably to the rational solution of this problem. It might be interesting to consider the idea of establishing an international research center which would deal with such problems and which would try to replace the present day ideological thinking (in the bad sense of the word) by a new rational and scientific approach. There was a lot of discussion here about this necessity to approach all such problems in a new way with an academic spirit.

EPSTEIN The difficulty here is, and it is a very difficult problem, that there is not one abstract justice, not one objective justice. The United Nations have 117 "justices" In practice, it seems that every country thinks it has the best and the most just approach, and in practically every dispute and case I have heard, it has never been a simple problem of choosing between right and wrong, it has been a problem of choosing between two rights, and every speaker thinks he has the most just approach. The non-aligned countries think they have the most just approach. On the other hand, the countries involved in the dispute or situation say that the very fact that they are committed gives them a lot of responsibility in a situation and in the outcome, and therefore it is better for them to make some sort of an assessment of what is or is not justice and to negotiate on that basis. Sometimes this is very far removed from what everybody else outside of the countries involved regard as justice, and from what many scholars and politically neutral people regard as justice. The whole concept of justice, even in national law, domestic law is

a very difficult thing to define or agree on. Very often people come to court crying that they want justice but what they get when they go to court is not necessarily justice, but the application of the law. I do not know how anybody is able to determine what is objective or absolute justice. There are degrees of justice and degrees of rights, and laws are made to implement right and justice or to safeguard them. But there is no sure way of knowing what is true justice in either national or international affairs. I certainly favor the idea of having international research institutes work on this problem. I also am in favor of the idea of trying to find out what is international public opinion, meaning that of individuals as well as of governments, regarding any given situation. But when it comes finally to declaring or deciding what is justice in any given international situation the only way I know of establishing a workable standard of justice is through the votes of governments in the United Nations. This at least determines what the United Nations regards as justice. Those nations which are in the minority may denounce the decision as unjust or illegal, that is similar to the views of a man who loses a case in a court of justice.

Now you propose finding some scientific approach. Maybe, there is such but it seems to me that for two thousand years experts have been arguing about this concept, whether it is philosophic or a legal one, of what is justice. The United Nations wants peaceful justice, but the only standard, the only measure I know of is in the result of voting in the United Nations. One of the tests you may use then is the vote. This is to a large extent determined by the non-aligned and the other small powers, who have the majority of votes. Thus, they are the ones who can say what, in their view, is justice. While it is not easy for them to take position against any or all of the great powers, they have done that on more than one occasion.

MARKOVIC: A scientist who is not a mere expert but a genuine intellectual is not only a man who belongs to a certain country, to a certain nation, religion or creed or any other particular, closed community: he is above all a human being who tries to understand the needs of mankind as a whole. Science is a universal, human product,

so there is an analogy between truth and justice . With respect to what you said about justice one finds a comparable situation concerning truth: one might claim that there are thousands of truths, because everybody holds that what he believes in, is true. But scientists develop objective standards of truth, so when one critically analyses a statement or a theory one can establish whether it is true or not. There is no doubt, justice is a much more difficult problem because emotions and interests are involved, and besides, very few efforts have so far been made (in comparison with the problem of truth) to establish any objective criteria. And still if something will not be done in this field, we will get no where in all problems of international law. For example, you say when there is a dispute, people do not ask what is just, but what is law, and they go to the court to have the law interpreted and applied to their case. However, there is not one law but various laws which are based on certain conceptions of justice. There are countries with different ideologies and different interests which they express. How can we hope that they will create and accept certain norms of international law if there is nothing common in their conceptions of justice and morality? Certain steps toward international have been taken several decades ago. Now countries, where social order and political regimes have been changed and also new born nations are inclined to take the attitude that the whole existing conception of international law does no longer correspond to the change of the world. Shall we endeavor to find out what is an adequate international law which corresponds to the present day historical situation assuming a critical position with respect to all those countries which oppose to the very idea of establishing an international law and international jurisdiction? Or shall we take a sceptical attitude that mankind is so divided and disintegrated that no agreement in these matters can ever be reached. After all one should at least be consistent and take either one attitude or the other. It seems very illogical to advocate the creation of supernational communities, international law and even world government and at the same time, to deny resolutely that there are any elements of the idea of justice which are acceptable to all. Without a minimum of common values no community is possible.

EPSTEIN First a word about Prof. Markovic's statement that there should be some scientific approach for discovering what is justice. It is not only that there are 17 "justices", but the justice which any one of these countries believes in, varies from time to time not just from generation to generation, but from year to year because there are so many changing factors to be taken into account. If you have to start to define in scientific terms what is justice, you have to establish criteria and instead of helping to agree on what is justice you may merely multiply the disagreements because there may be disagreement about every one of the criteria. You know that for hundreds of years people talked about a just war and what is a just war. In the League of Nations they implied although I don't think that they used the expression in the Covenant, that you could have just wars. But the nations agreed to ban that concept in the UN Charter at San Francisco, because there was no way of defining it. Something which you would think might be simple to define, as in the concept of aggression, which is a much simpler concept to define than that of justice, the United Nations has spent years and filled up thousands and thousands of pages in trying to define aggression, but without success. These concepts are not abstract, but are related to political considerations and the positions of states any given moment, and so long as states will operate as sovereign entities, so long as they are going to operate on a political basis, so long as the United Nations function is to harmonize the different political views of the different countries, so long will it be necessary to operate on a pragmatic basis of what is justice. This is not pure justice, but it is the only way I know of approximating it in a practical way. Perhaps it is not "justice" in the abstract sense, but it is United Nations Law.

If you can elaborate as to how you go about scientifically defining or discovering justice, I think you will have made a contribution to humanity which will be a real milestone in human thinking.

MARKOVIC Certain qualifications are obviously needed in our discussion.

First, there is no such a thing as absolute justice. I was speaking only about a minimum of common elements of the idea of justice which are generally (although not universally) accepted in a definite historical situation.

Second, one should distinguish between intuitive beliefs and definitions of concepts such as "just war" , "aggression" etc. The difficulties with definitions are the result of an unrealistic desire to have here clear-cut concepts and cover all cases by them: one always finds certain exceptions. But if we disregard exceptions and construe these concepts in a statistical way, then, obviously, there is a core of meaning of these terms which is being internationally accepted. In spite of possible resistance or indifference of certain individuals, there is general agreement that attacks of Nazi Germany were cases of aggressive war and that it was just to oppose them by force. Another example: I have no doubts as to what would be the result of an international public opinion examination on the problem: whether it is just to take millions of people as hostages for the policies of their governments, etc. The same criteria of evaluation could be extended to other similar cases , otherwise I see no basis for international law and no hope for even most elementary forms of world organisations.

Any organisation presupposes a minimum harmony of mutually clashing interests and a minimum of common values which constitute standards for settling issues. I am aware of immense difficulties in stating explicitly those values which are implicit in our intuitive beliefs and practical attitudes, but it is high time to start doing something in this direction. Sceptical exaggeration of difficulties and fruitless lamentations over human irrationality and differences of interest would lead us nowhere.

I spoke of "scientific" approach because, in difference of professional politicians, who are immediately preoccupied with the interest of particular na-

tions, scholars, according to the very nature of their calling, are expected to think in a more objective and national way. Of course, they are also only men and they can never absolutely eliminate emotions, but they can control them and overcome them by the use of scientific method. The fundamental idea which was expressed in the first Pugwash statement by Russell and Einstein was that scientists must approach the problems of war, peace and disarmament not primarily as individuals who belong to a given nation creed or race, but as human beings--members of the species, Man.

Without such an approach the whole Pugwash Movement and all conferences like this one would be devoid of any real meaning.

EPSTEIN I find it difficult to go all the way with the speaker. Psychologists are also scientists, and they are saying more and more, that people's decisions and attitudes are dependent not only on their education or intellect but also on their emotions. People decide many things because of what they feel in their bellies and not just of what is in their brains. This also must be taken into account in determining how each individual as well as how every group, how every state regards justice in any situation. It seems to me that this is really an area of philosophical discussion. Abstract or absolute justice is very good to have as a goal but how you achieve it in practice is beyond my comprehension.

ARANGIO-RUIZ I want to make a few remarks on Mr. Markovic's idea of a "scientific" approach to international justice and on Mr. Epstein's reply to Mr. Markovic.

To Mr. Markovic I would reply that I do not believe scientists to be, by definition, more likely to be just. So, I would not trust them with the government of mankind simply by reason of their profession. I do not believe either that justice is a matter that could easily be dealt with by a scientific institute as if it were a technical problem, such as a question of arithmetic, of chemistry, or even of economics or positive law. The idea of justice is the very idea of "right".

As such, it is a very relative concept. Before deciding what is just or less unjust, one would have to decide from which point of view the choice should be made. And the choice of the point of view could hardly be made on a "scientific" basis. It would be a matter of political choice.

To Mr. Markovic' idea of setting up a kind of international "justice research institute", I would oppose that the problem is not so much to choose "scientifically" what is just or less unjust. The problem is to devise and put into effect the more just or less unjust procedures to make that choice, namely to decide effectively what is just or not just.

And here I have the impression that the student of international society can only draw from the experience of national societies. I do not mean, of course, that national societies have solved the problem of justice once and for all and in an ideal way. Something, however, has been achieved. And it is something far more advanced than any comparable achievement in the international society.

The problem, in other words, is to try to adopt, in the universal society, procedures and machineries more apt to give adequate expression to the conflicting ideas of justice and to allow the only possible ultimate judges - human beings - to make their choices effectively. Which is, after all, just an elementary idea of justice. What I mean is that one should find ways and means of making the machineries of international society at least less strikingly rudimental as compared to the parallel machineries enjoyed by free national societies. And here I am perhaps more exigent than Mr. Epstein when he says that the only measure or standard of justice he knows of is the result of voting in the United Nations.

In national societies - and I refer to democratic societies in my sense - the "problem of justice" is virtually solved by the adoption of the representative form of government. In such societies the basic rule is the government by the people, I mean by representatives of the people, namely of the human beings

who are the members of the community. National parliaments and national executives are, in free societies, the more or less "perfect" representatives of all the members of the community participating in the elections on an equal, or relatively equal, footing. National parliaments are not just the representatives of cities, countries, provinces, departments or (in a federation) member states as separate political bodies and regardless of their regime and population. The members of the electorate are all integrated in the national community and they owe their supreme allegiance to the whole community. The representative bodies thus draw their power from the people as a whole, regardless of subdivisions. It is precisely in the bodies so constituted that the fundamental legislative and political choices as to what is just or unjust are made on behalf of the whole people or nation. Similar considerations, must be made - mutatis mutandis - for the executive organs of the government. One can say, in brief, that there is in force, in democratic (national) societies, a basic rule of justice as a rule of method, or procedure. This is the rule by which the essential choices as to "justice" are made, directly or indirectly, by the people, by the human beings constituting the membership of the society.

Reverting to the contemporary international society, the situation is radically different. The United Nations organization - the less imperfect of the rudimental forms of "government" attained so far by the international community - does not consist of the representatives of mankind in any sense comparable to the sense in which national democratic governments represent their respective peoples. The General Assembly of the United Nations is not the parliament of the world; elected by men and women throughout the world on an equal, or relatively equal, footing. It is a body of delegates of governments as sovereign entities, each government being a member regardless of its political regime or internal representative character and enjoying one vote regardless of population. One : governments, not peoples are there; two the government is not necessarily a democratic or representative one, tyrannies and

democracies having an equal right to participation three, each government has one vote, whether it rules over a few hundred thousand, a few millions, or hundreds of millions of human beings. Last but not least, each one of the participating governments - even the most democratic governments (a minority) - is naturally led to be concerned not so much with the general exigencies of mankind or universal justice. It is concerned mainly, if not exclusively, with the interests and exigencies of the national community it controls. So, the majority in the United Nations General Assembly - and it matters little which majority it may be at my given time or on any given issue - is a majority of sovereign entities, the main preoccupation of which is naturally to pursue its own interests as a political body, namely: first, to preserve its sovereignty and freedom of action as much as possible and at all costs; and second, to promote the interests of the political community it (freely or despotically) is in charge of.

Now, I do not deny in the least the faults of national democratic regimes. It would be easy to list all the aspects under which these systems are defective as machineries of justice for all the members of the national community. But however sensitive one may be to such defects, one is still appalled by the realization of the abysmally deep measure of imperfection of the parallel international machineries. I find it very hard to accept Mr. Epstein statement as satisfactory. The majority in the United Nations General Assembly may well be the only official standard or test of justice in international society at present available. I wonder, though, if we can accept it as such as long as representation in the United Nations is what it is. Any enlightened public opinion, in my view, would provide a far better standard of justice than a majority of national governments endowed with so little representative capacity.

For the United Nations majority to become the standard of justice something should be done about the representative character of the General Assembly. The one vote per government rule - whatever the population

and the degree of truly representative (democratic) capacity of the government is absurd. I know, on the other hand, that the problem is a very difficult one.

Some governments are studying the matter. But I'm afraid that the difficulties on the way to an improvement are much too fundamental for us to be very hopeful in an early solution. In the meantime, one can only try to use the existing machinery to the best of one's ability, trusting perhaps in the positive effects that may derive (for the representative character of the United Nations) from the improvement of the education and form of government in the various countries. But is such an improvement under way? One wonders, at times, whether dictatorship of one kind or another is not the prevailing form of government in our time.

— 9 . . . —

Round Table : CIVIL DEFENCE

Bjornerstedt - Friis Møller - Stonier

Friday 17/6 16:00

CALOGERO I have one question which could be answered either by the Panel Members or from the floor, and the question is : What is the situation in the Soviet Union especially with respect to civil defence? I know that it is not as easy as it is for the United States to know what is going on, especially with respect to ABM and also, to a certain extent, to civil defence but perhaps our friends who live closer to the Soviet Union may know more than we know and may perhaps tell us what is going on there, especially with respect to civil defence. This question is especially important because one of the arguments used in the United State in support of a civil defence program is that, in the Soviet Union there is a very large and extensive civil defence program going on. And I would like to know whether this is at all true.

LAPTER I really cannot tell you how it is in the Soviet Union, but I can tell you something about my own country. It seems to me that there were some plans for civil defence just after the War and especially at the height of the Cold War in the '40s. The danger at the time was represented mainly as a non-nuclear danger, and the defence was conceived as a defence for the bigger cities in the power and the problem of building up the Metro as a shelter system.

After the arrival of the H-bomb, it was clear to everybody that building shelters was a question of throwing away money, which we lacked anyway .

May I use this occasion to put some questions to the Panel. First of all, I would like to know if everyone of small non-allied countries could do just as well as Sweden had done? Or, perhaps besides smallness and non-alignment, the money is necessary as well. Then, there is the problem of the uses of the underground tests.

Couldn't they be used to test nuclear charges for high altitude ABM's and I think that it is quite possible to have quite a roomy cave, to do such testing. These are my first questions.

The next one is on the difficulties that could arise when there is some sort of nuclear coownership. There is a complication in connection with the use of say the IRBM's and ICBM's. But it struck me just when listening that the coownership of nuclear sharing for the defence could easily be turned into nuclear sharing for an attack. So I would like to have some light thrown on the problem, if nuclear sharing complicates or does it make easier starting an attack or preparing a defence?

BJORNERSTEDT : When you consider the role or the possibility of other small countries doing the same thing as you said Sweden has done, I just wanted to put into perspective the relative magnitudes of the expenses involved. We have an annual military budget which runs to about one billion dollars, and the civil defence budget - if you include the shelter system - is \$ 25,000,000 to \$ 30,000,000

FRIIS MØLLER If I understood your question correctly you asked whether the possibility of sharing control would be easier or more difficult if we had ABM defences. As I see it, the question for the European Nato-members after a deployment in the United States of ABM's, will be: should Europe have ABMS or not?

The second question will be: if we are going to have these weapons, how? And here we could have two possibilities: the European countries could make them themselves - I think this is excluded for political and economic reasons and also because rocket technology is not as advanced as in the United States or in the Soviet Union. The only other possibility is that the United States provide the ABM's. In any case two snags exist which will have to be taken into account: a conversion problem and a problem of command and control. The first problem arises from the fact that defensive missiles at the present state of the art can be converted into offensive ones. The second from

the extremely short warning periods which the distance from the Soviet Union to the western European countries allows. I can think at the present time of no joint allied command system operating with a speed which would permit an allied integrated ABM-System to perform useful role.

STONIER Can I just make one point which was raised by Calogero. A thing that would generate almost insurmountable political pressure on the part of American public opinion is if there were, in fact, the widespread public view that the Russians were engaged heavily in civil defence and anti-missile programs. I think this would automatically mean that the United States would enter the race. Part of this difficulty already exists: Our military and our economists point to the thick doors in the Moscow subways as proof that this is obviously a civil defence system etc., it is the worst possible psychological thing that the Soviet Union could do - I hope that the message gets back to them!

FRIIS MØLLER : I think that the main point is that it is very difficult to persuade public opinion to see that a purely defensive weapons-system is of any danger to anybody.

STONIER This is your point then: "An ABM is of value to an aggressor because it is most effective following a first strike, when you can expect the second strike coming back at you to be disorganized".

BOSKMA * A few years ago I was with a group of American physicians who did some research on what would happen in the Boston area if there was a nuclear explosion.

They discussed the results and arrived at the conclusion that the after-effects, especially the effects of epidemics, the psychological problems and maybe psychiatric problems would be huge, and they couldn't do anything about that.

Would you like to comment on that?

My second question is: Are there any investigations to show in what way public opinion is changing on war and peace; on attack and so on, when you have a civil defence system or when you do not have one?

STONIER Yes. Let me take the second question first, because the data there happens to be rather thin. There have been some surveys on American attitudes and, if I recall, they were rather contradictory: Civil defence in some cases would tend to favor a feeling that you have solved the problem and that you accept the function of war. But there was also evidence that there had been generated an increasing amount of concern, viz., that the very people who had been buildingelters often turned out to be very pro-United Nations.

Does that answer the second question? Now the first question, on the studies of the Boston Group--the physicians for Social Responsibility.

Do you want me to comment on the study in general or on some of their conclusions?

BOSKMA * In what way could you save them if they haven't any system of civil defence? Maybe the after effects might be so vast that civil defence wouldn't have any value?

STONIER Technically, civil defence does not take into account just how feasible it is to get people into a shelter in time, and then the full consequences of having them there. Incidentally, there have been a number of psychological studies on the various aspects of keeping people in shelters, and it is interesting to see the kind of problems that turn up for instance, one of the biggest problems turns out to be the fact that the young people -- teenagers and young adults -- were much less inhibited than their elders, and would neck and pet in the shelter even though they knew they were observed; and this led to a great deal of social stress and trouble. Another problem was gambling. Nobody had anticipated that if you collect 50 people, you are bound to have at least one compulsive gambler who insists that you play with him; and everything would work out for the three days, when he played with people who

like to gamble. But after that, he played with people who didn't gamble! These are the kind of problems that hadn't been thought of before, and came out during the survey.

About the after effects, you are completely right. The studies were sometimes contradictory in the sense that if one protected people too well, there existed such a disparity between the economic resources and the number of people surviving, that this would lead to disastrous consequences. Then there is the problem of epidemics following a nuclear war. In the United States, for instance, Bubonic plague is endemic from Kansas to the Pacific; and there are many other latent diseases that would flare up such as typhoid fever, dysentery, venereal diseases, tuberculosis, and so forth.

BJORNERSTEDT The argument has been put forward several times that civil defence will give people a false sense of security. This to me has always seemed to be a curious sort of argument, not per se, but in the situation that we do have now, when most of the expenditure goes into trying to buy security through having military strength.

If you advance the argument against civil defence that it lulls people into a false sense of security you could use the same argument twenty times over as an argument against military defence and the military means of trying to give security.

The difference between the military defence and the civil defence is that military defence is directed towards increasing the cost for the aggressor as much as possible and, in this way to try to deter him from the aggression. Civil defence gives up on that score, and it should - if it is a real and honest civil defence - and should tell the population that: "We shall never be able to protect you if the aggressor actually looks at you as his primary target."

What is possible, and what might be done with a civil defence system is to tell to the people: If a crisis does occur, if nuclear weapons are being used, not against the population as a primary target, but

against military targets, then we might save you from some of these effects". And if this is telling them to be secure, then I think it is a public relations affair which is badly managed; because that is not the main objective.

The objective, should rather be to provide a kind of life insurance which is not generally valid as a protection : it is valid only in some circumstances.

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Editors Note :

The intervention was not corrected by the author.

SOME DISCUSSION FOLLOWING THE ROUND TABLE ON EUROPEAN SECURITY

(Wed. 22/6/67 - 9:30)

BOCKMA I should like to ask a few questions. What are in your opinion the fundamental reasons for the reunification of Western and Eastern Germany? Are they emotional? Are they economical? Or are there other reasons? The state of Germany didn't exist as it is now a century ago, so why start making a strong Germany again in Europe? There are many plans for a denuclearization of Central Europe. Will they have any chance of realizing? According to some people a denuclearization of Europe will introduce an instability in the military balance. Could this instability be partially reduced by having a rather large conventional force, so that in a situation of conflict of any sort, you can try to reduce the chances of escalation?

LAPTER If I may state how I see it from the outside; my opinion is that the question of reunification in West Germany was utilized mostly for two reasons. One, to make use of the national feelings against the social unrest that existed in Germany after the fall of Hitler. Second, to get some support from the West in re-arming Germany. In order to have any kind of policy, home or foreign, one has to have the means of its enforcement, the police and the armed forces. They - the forces - form the major part of the national power: if you don't have them, you don't count, if you want to count, you have to have them.

By stating that the main problem for Western Germany was to reunify, in a specific way, so to say, to devour the Eastern part of Germany, was more than acceptable to the Western allies. For that meant that the GFR could not reach an agreement with the USSR, a nightmare for many politicians west of the Rhein. Moreover, under some circumstances the GFR might be used as a spear head against the Eastern bloc that was formed at the end of the Forties. That was a commonly acceptable policy both for western Germany and her Allies, at least as long as the GFR went up the first steps on her ladder of success.

It is clear that after the unification of Germany in the '70's the appeal to the national unity would be a strong one, especially in a defeated nation. And by putting herself in a position where the GFR could influence future development in whole Europe by gaining power (economic and military), she could win back that

gaining power (economic and military), she could win back that freedom of movement that will allow her to change her policy in accordance with the changing circumstances and aims.

I was asked what are the problems of reunification seen from the view of the German people. I shall try to explain it. In Germany, we have different groups, but most of the people are not interested in political problems. They read their "BILD-Zeitung" a newspaper of very low level and watch television and hear that the Government wishes the reunification; but these are only words which, however, secure many votes for the Christian Democratic Party of Germany. However, there are smaller groups thinking seriously about these problems. But let us look first at the official attitude which was explained by Prof. Lapter: For the German government the German democratic Republic, does not exist and therefore reunification is only possible by the "Anschluss" or annexation of the Eastern part of our country.

I think that most of the people who see this as the only possible way don't believe in its realisation. Also reunification would make necessary that many financial supports must be given to the Eastern part of the country and this would mean that they had to pay more taxes and therefore I think that many people haven't-must interest in reunification.

There is another part of our people who wish reunification, but they know that reunification will only be possible if a discussion between East and West between the government of the German Federal Republic and the German Democratic Republic-takes place. Some weeks ago, we had a film on television called "The German Federation". This was a science fiction film which looked back from 1976 to 1966 and showed the development of a possible reunification during these ten years.. The film showed that this was achieved only by an agreement between both parts of our country.

On the whole I think that many people have not much interest in reunification though they talk much about it. A small part is interested but feels that only an agreement between both parts of our country would lead to reunification.

AMALDI I agree with what has been said, i.e., on the danger of the reunification of Germany. But considering the situation that we had in Italy before 1848 when the country was divided in many little states, or the situation that we would have to-day in Italy if, at the end of the last war, it had been divided in two countries along the Ghotic Line, I understand the aspirations of the majority of Germans to unify their own country. This is certainly a difficult problem but I believe that it can find its solution in some form of federation or confederation of the European states.

SCHULZE I have omitted to mention two points; the use of military power and the waiting for a useful moment. I was asked if Germany would try to unify by military power. I don't think that this would be possible, but I think that there are people who are waiting for a useful or right moment - internal difficulties in the Eastern part - an example being the uprising in 1953, on June 17th. But the development has gone in another direction, and I don't think this is a real point to discuss.

LAPTER May I make one short comment. The problem as it is usually seen is muddled by putting behind the word "unification" different meanings. In Western Germany when they say "reunification" they mean mostly the absorption of the GDR and perhaps some parts of Poland, the USSR and Czechoslovakia. In Eastern Germany, when they say reunification they mean that it is a process, which could start only by accepting the notion that it was to be voluntary, slow and that both partners are to be treated as equals all along.

Nobody argues about the right of Germans to reunify in one state if they wish it. The problem is solvable if you recognize just from the beginning that there are two German states at present and that they are to be treated as equals. But the reunification of Germany is not only a German problem. Beside Germany, other nations are interested both in the method and the result of the processes of unification. Matters of highest importance for Germany's neighbors and for the security of Europe, are involved, and therefore, we cannot look upon the problem of unification as a purely domestic matter of both German States. We, I mean the people of Europe, will need some real, not paper guarantees, that the united Germany will not endanger the rights, freedom weell-being and peace of any European Nations.

It is rather difficult to compare, though there is some similarity between some states growing together into an international or supernational integrated unit and two German states which are parts of one nation and whose main difference is socio-political rather than national. Their tendency to reunify in understandable.

AMALDI I would like to clarify that when I speak of the unification of Europe I take into consideration also the structures in which, for example, Western European countries, Yugoslavia and Poland are combined together.

LAPTER There are some things that are self-explanatory. For instance, I don't like to be kicked. It is not necessary to explain why. Take for instance my country. For over 100 years Poland was partitioned with no self-government, forming parts of three foreign empires. Poles revolted, organized uprisings to be free and unified. It is self explanatory that, with all the differences the Germans have the right to demand reunification. The real problem starts only when they try to subordinate more important problems like that of European security to their instinctive longing for unification. If they would understand the necessity of subordinating their demands to the necessities of European security they will certainly find out that the processes of unification could be fairly speedy.

Let us turn then, to the plans for denuclearization in Europe. This process practically started with the peace treaties that were signed with the former German allies in Paris in February 1947; these states, five of them were forbidden, among other things, to develop nuclear weapons, and other means of mass destruction. In 1959, Antarctica was declared denuclearized and demilitarized zone. And then there was a lot of talk, though little real action on keeping this or other parts of our world nuclear free or denuclearized.

How is the problem of atomic disarmament connected with the conventional weapons? As far as Central Europe is concerned, in all plans and all stages of the development of the Rapacki Plan, there was a built-in connection between the two in kinds of hardware, because it was agreed upon generally that the problem of nuclear weapons was overwhelmingly more important as they could bring much more damage to Europe than the conventional weapons. Both kinds of armament are somehow interconnected and this was agreed on a large scale in the American and Soviet Plans for general and complete disarmament and so is the case with the Rapacki Plan although the stress is on denuclearization.

The Rapacki Plan is even called officially "the plan for denuclearization and the lessening of tension in Central Europe" which means that other means, as for instance, the conventional arms reduction are foreseen as well; the Rapacki Plan proposes to cut armed forces to some acceptable level, so that they could be used for internal purposes, only, i. e., for keeping law and order. But the incorporation of the steps leading to general arms reduction doesn't mean that conventional and nuclear arms could be treated on the same level, because the level of possible damage, done by two kinds of weaponry is quantitatively different. Therefore, the so-called Gromulka Plan concentrates, on a controlled freeze in nuclear armaments in Central Europe, and a preliminary to general arms reduction in this area.

All Polish plans propose to start from the doctor's regulation "primum non nocere" or as the Italians say "non nuocere", which means not to do something harmful, not to make a bad situation turn into a worse one. The proposals made by Poland were put before European opinion. We proposed pending more general solutions in the force of a non-proliferation treaty to freeze nuclear arms, in the most dangerous, are of confrontation of two war machines. We proposed to have this freeze by national units, which means, that no new nation in the given area, in Central Europe should come into possession of nuclear weapons; that the conventional weapons level should not increase, and should by common agreement be reduced to the lowest level. I think the point of real importance, is to stop the direction in which things are going, at present, because it seems to be very difficult, if at all possible, to reverse the trend. Before we could reverse it, it is necessary to stop it. And to stop it, means to freeze it complying with the main principle of the Zorin-Mc Cloy agreement I mentioned already on another occasion in one of my lectures because freezing doesn't change the existing power, relationship. The wish, of not allowing things to get worse or of stopping and then reversing the tendency for arms race, is the most important idea that was put forward by the Polish and other governments in their search for a more secure Europe.

Rapacki and other plans, to get rid of obstacles on the road to security, are moves to do something by way of bilateral or multilateral agreements. We are having plenty of them. I think there is no country-except Western Germany-which does not have normal relations with our country even with GFR. Though we have no diplomatic relations, the GFR government refuses to recognise our frontiers; we still have a number of trade agreements.

I don't think there is even one European country to which we are not bound by a wide range of official bilateral agreements on (trade, culture) exchange, and so on. It seems that this tearing down of the obstacles that arose in the Cold War, forms another line for the building-up of the feeling of security among the European nations.

Accepting that there exists such trend (although with strong counter currents, let us accept, that the picture of Europe in, say, ten or fifteen years from now, will be a picture of a more unified Europe rather than the disunited Europe. Europe in the foreseeable future could be unified into one of the super powers. Such a possibility is not to be excluded. Europe could be a major power if you put together all our resources, perhaps the strongest world power. But that would be the most dangerous trend, and that would only speed up the "final solution" for the whole world.

If we choose to go the way of a European super power, we are bound to have militarized Europe, and an anti-democratic one. Because then the major country inside Europe will have major influence on the policy of the unified continent, and that will enable it to "take over" Europe by peaceful means. It seems, therefore that what we need in the near future is another picture of Europe unified not "against", but unified "for" which means unified to such an extent that it is necessary for the welfare and security of European nations. This could be done by accepting some arrangement that will tear down artificial barriers in the free exchange of goods and men while increasing the feeling of security and independence, and by building some kind of European security system. This could be presented as some sort of a federation of a confederation, as for instance, some call the United Nations a "confederation". That could be a problem of linguistics but when you say "federation" or "confederation", it seems that there should be some superior body with an overall authority over all nations of Europe. It seems to me that in the next 15 or even more years European unity could be achieved only by treating all European countries as independent units, preserving this independence as long as they wish. Some sort of a solution is offered, by the Chapter VIII of the Charter of the United Nations, that speaks on the regional agreements that are closely connected with the whole framework of the United Nations. European security will then

arise as a natural part of world security, and will not be directed against any other region or against any superpower. Such an arrangement under the Charter could bring more security to the European nations in the form that would really be acceptable to all European nations.

Certainly it is not very clear how such regional security arrangement could work. It needs a lot of clarification, because the three articles in the Charter are forming only a general outline of a system. We could, therefore, discuss what is necessary to do to help such an arrangement to become workable in the existing circumstances.

We have to move and we are moving anyway in the stream of time. Let's look at economic and social processes that are going on in all countries: no country is the same now as it was 20 years ago. The dynamic processes are at work whether you like it or not. We could, however, influence the direction and perhaps the speed of the changes, but only if we act conscientiously and in common. Otherwise we are bound to drift to unknown and perhaps dangerous places. And what we do know, is the truth, that the German problem is closely connected with the European security problem, and that there is nothing greater for the European nations, including both Germanies than this security; one could state without an exaggeration that without security in Europe there will be no reunification and perhaps no Germany at all.

KORSGAARD PEDERSEN* I find that the picture which you have just described of Europe, in say, 20 years, is very interesting and fruitful. But you are talking about a system of the kind which is foreseen in the U.N. Charter if I understood you correctly. I would be afraid that a system of the kind that you envisage would be too loose, and there will always be differences of interest, between the European powers themselves. If you do not create a rather strong system which implies balances between the individual European countries, then I do not think that is very worth while or worth very much.

LAPTER It is feasible in the next few years.

KORSGAARD PEDERSEN* That is the big difficulty. I agree with you but it is necessary.

LAPTER If we talk of confederation, we can look, for an example, to the Swiss Confederation. The Swiss Confederation actually has constitutional rules according to which they have armaments, they have a military organization, but they decided never to use their arms but in defence from an aggression coming from the outside.

CALOGERO There ~~are~~ are a few points that I would like to raise. The first concerns the question of Public opinion in the Federal Republic; I am a little more optimistic following some news which I have seen in the news papers recently, and I would like to ask you if my optimism is well founded, namely, if there is some dissatisfaction among the younger generation with the more or less frozen position of the Bonn Government, and there is some pressure for change. Specifically I have seen reports that during the very day of June 17 - the national holiday dedicated to the German unification there were demonstrations from young people, not nationalistic demonstration as one might expect on that day, but rather demonstrations asking for a new foreign policy including explicit recognition of Eastern Germany and a new approach to the problem.

My impression - and maybe I am wrong - is that this is not just a small bunch of young people but it is a voice which carries some political weight, and I think that this is true, because the three major German parties are beginning of course slowly and cautiously, to change their position. One way they are doing this in through the public discussions to be held by the social Democrats and the East Germans, moreover there has been the news of Mr. Barzel making this rather revolutionary speech with respect to the policy of the Christian Democratic Government, envisaging a future unified Germany with the Russians troops on its soil.

SCHULZE I think that there are some possibilities in the direction that you have shown. Since the film on German TV that I mentioned previously, there have been some developments in this direction. I think that the film was very useful for such a discussion of the reunification of the parts of the German country.

Among the younger people, it is right there are many who are working in this direction. Not as much, however as it seems. In the German technical High Schools there is not much

political interest to be found. In the Universities you have more students working for new ways in politics. I think, if we had more students working in this direction in Germany, we would have progress, and I hope that this progress will increase.

LAPTER I think that you put your case very well. A statement had been made by President Kennedy, during one of his press conferences. A Polish journalist asked him if it was necessary to defend Germany by nuclear weapons stationed in Germany? Kennedy's answer was emphatically NO!

If it would be necessary to defend Germany we could do it and perhaps better outside Germany. Under the present circumstances, with the ICBM's and Polaris's, the question of placing the sites for the delivery of nuclear charges is not as important as it was before the arrival of the transcontinental delivery vehicles. The question could be put thus: Is it necessary from the European point of view to have nuclear weapons on German territory with Germans dividing their use and controlling these weapons? The Western German government would like to have nuclear armament in Western Germany, and the right to take part in deciding when and how to use it. I think that this problem deserves to be seen not only from the German point of view but also from the European point of view. Italy is just as much interested in using or not using nuclear weapons in Europe as the GFR is. So why does one have to agree to this special role for Federal Germany, who made a lot of trouble before the war and who is now the only European country which demands the coownership in nuclear arms and the revision of the European frontiers.

FRIIS MØLLER I think we should go further into the discussion on the problem of control of nuclear weapons. We have abundant indications I think that the problem of nuclear sharing is viewed in the west as one which has several possible although imperfect solutions ranging from joint ownership to interallied consultations. One has the feeling in the West that what is in the picture at the actual moment is some sort of planning mechanism, a sharing between allies and of strategic thinking. This is essentially a process of talking to each other and looking into each others papers and this no treaty can forbid. This might already take place, and could have taken place for ten years without any one of us knowing anything about it. So, I don't really see why if such a solution was preferred within the NATO Alliance the Warsaw Pact countries should view it as a stumbling block because there is really nothing they can do about it.

LAPTER Western Germany placed herself during these years of her partnership in NATO in such a position that allowed her to play a bigger and bigger role in this organization. That's strategically a very good position, for at present NATO depends more and more on the GFR, who wants to utilize this position as far as possible. They are already treating unofficially that they, the G.F.R., have after all an alternative. If they will not get what they want from the West, they could try to play with the East. That was implied in Adenauer's farewell speech when he unexpectedly stated that - after all - Russia is, and therefore could be, treated as a peaceful nation; with which Federal Germany could make all sorts of agreements parallel to or instead of those with the United States; for just Russia is a country which could solve the German problem in the easiest way and by peaceful means. Certainly, you could call this blackmail, but this does not make even a slight difference, for blackmail (or the threat to do something unpleasant to other countries) it is a staple food in international power games. But this potential threat GFR is trying to get nearer to the control and ownership of the nuclear arms. They try to do it inside NATO in a "legal" way. The method they use is to ask for modest, very small changes, that will slowly build up into a qualitative change; such change in nuclear status of the GFR could be treated as a real danger for the security of the East and could provide a strong reaction, thus endangering European peace. For the American point of view is quite possible that they will give up their opposition to nuclear sharing with the GFR because otherwise Germany could leave NATO. But the European interest demands not to give up but to counteract. After all Americans might live even without Europe, but we, Europeans, we just cannot. We need therefore to make moves that will bring us toward a more unified physically and spiritually than it is at present. We have theoretically three kinds of possible security arrangements in Europe: one is under the United Nations and covers whole world; two others are Security Arrangements for Eastern and Western Europe, under NATO and Warsaw treaty. The first one is too general, the other two, too specific, for, they are not only complementary, but in many instances even contradictory, and therefore potentially dangerous. Therefore we need an all European security arrangement inside which all questions, the German including, will find satisfactory solution.

AMALDI I should say that I agree with most of the things that have been said by Prof. Lapter; I also agree with his general line of thought although I am not ready to agree with all the particular points. He has stressed very clearly the opinion prevailing in Eastern European countries about the growing military power of Western Germany. I would now like to mention some worries of many people in Western countries. To this aim I will use some examples taken from my professional life. There is, for example a beautiful book on electrodynamics, written by two very distinguished Russian scientists which you can read from the first to the penultimate page without finding the slightest indication that it incorporates some specific political orientation. It could have been written by scientists from the USA, Europe, Russia or China. The reader would simply conclude that this is a very good book. Then suddenly, on the last page, the authors declare that they were able to write this book because they were inspired by Marxism. What do you suppose is the reaction of the western reader? First the reader starts to laugh but after this silly but, natural reaction, he thinks what are the reasons for such a statement and arrives to the conclusion that they are practically in some way forced to do that. One is brought to think of Galileo's difficulties and of how bad was the society that forced him to place on top of his scientific views declarations of faith that had nothing to do with his scientific thinking.

The book on electrodynamics that I mentioned above is not the only one. There is a very good book on gravitation and relativity written by a famous Russian scientist which contains in its preface a similar declaration.

These two examples and many others may serve to clarify some of the worries that we have in western countries about the type of society existing in the eastern countries.

BOCKMA Well, I think that Western history has some more examples. You can find scientists like Newton and Kepler in the XVII Century for whom there are good relations between their motivation of doing science and science itself. Kepler very often demonstrated that it is Christian behavior to look into things and try to discover the thoughts that have been put into this world. In my opinion one should not object that the motivations of scientists are put into their books on science, though the scientific results are invariant to it.

LAPTER I wish that we could arrive at the situation when we in the East would not be worried about the development in the west and vice versa. Let's have common joys and common worries.

AMALDI But there are apprehensions on both sides and if a group like this meets together it is just to offer the possibility to people of all countries to discuss together, clarify their position and try to contribute to find solutions of the problems which, if not solved, may lead to major disasters.

CALOGERC The question of European Federation has been mentioned by several people in the Panel, and I understood that Prof. Lapter is not too much in favor of it. Rather, he thinks in terms of bilateral agreements between states but he doesn't seem to have any sympathy for the institution of "supernational" institutions. I would like to argue a moment against this view. We see in Western Europe that certain very initial steps have been made in the direction of "supernational" institutions. We also see that the torch against this development is held by De Gaulle the same De Gaulle has refused to sign the test ban treaty. Both action have their origin in a rather archaic brand of nationalism.

A European Federation would mean the possibility of establishing all sorts of ties economic, cultural and diplomatic with the Eastern Countries. I think it would be a sound policy, on the part of those people everywhere who are in favor of détente and against the spirit of nationalism if there was a more sympathetic attitude towards the European Federation.

LAPTER I was not stressing the bilateral means of bettering the international situation in Europe, I tried to stress rather the necessity for both the bilateral and multilateral means to achieve their goal. Still I feel some apprehension when we talk about a European Federation. First reason is a practical one; when you talk about the distant future you push aside somehow the things that could be done immediately.

The second reason is that I am afraid of some movement that could be described as some sort of European Federation could at present incite a reaction against the closer cooperation among European nations because of the fear that in this way the sovereignty and independence of a given country is either being surrendered or at least put in danger.

AMALDI I appreciate the points made by Prof. Lapter, namely the idea of having a number of bilateral or multilateral agreements on matters that may appear of secondary importance, such as cultural matters, commercial matters, industrial problems, etc. They certainly can contribute a lot to create a situation in which at a certain moment the formation of a federation or a confederation of nations can become a natural step .

But I would like to go back for a moment to the type of worries that we have in Western Europe about the society existing in Eastern Europe and that I have already mentioned. If a Western scientist would say at the end, or at the beginning, of a Physics book that he has been inspired by the Holy Ghost or anything else, my reaction would be the same. I am strongly against the introduction in a scientific book of elements which are not directly connected with the scientific subject treated in the book.

Scientific matters or at least matters sciences are such that everybody should agree irrespective of personal religious or political creeds. Therefore the introduction of elements not directly bound to the subject is always very dangerous and should be avoided; it appears as a method that will bring pretty soon to strong disagreements even in scientific matters. What one should try to do is the opposite : one should try to introduce a scientific attitude in other fields and not try to introduce non scientific elements in science.

Editors Note :

x The intervention was not corrected by the participant.

**DISCUSSION FOLLOWING THE CONCLUDING REMARKS
AND SUMMARY GIVEN BY PROF. CALOGERO**

Friday June 24 1966 - 16:00

AMALDI We thank Calogero for his final report and I now open the discussion.

We would like to have the comments on the content of the School and we would appreciate very much your criticism while we don't care for praises since this School has been conceived as an experiment. Therefore, as in the case of all experiments, you can always imagine another one which is much better. Incidentally, during these days we have used the word "truth" on various occasions. I should say that as a natural scientist, I know only one satisfactory definition of truth, that is, the results of an experiment that is much better than the experiment you are doing at the moment - that is the only definition I know.

I will start by opening the discussion on the content and format of the School. We would like very much to have some comments from you, since these will help us in the future.

NIEZING First of all, I should like to express a feeling of happiness. I was very happy to be here, and I was very impressed by the very good organization of this school in many ways, not only for the accommodations and so on - although that is also a very important thing and I know it requires much time to organize such a thing - but in the first place and I think I speak not only for myself, but for all participants - I was very impressed by the excellent climate we discussed and debated in.

I would like, since you have asked for critical remarks, to provide some, and I do hope that you will understand that I do this only in the interest of the School itself. I would like to make some small remarks and two slightly more important ones.

First, I would suggest that a more equal distribution of the time allotted for making remarks would be better. That is a good habit, I think. It sounds not very scientifically, but in fact, it is a very good habit, if

you give everybody who wants to say something about five minutes for making his remarks. In some cases there was not enough time for everybody to make his remarks and to ask questions. I also had the impression that the beginning of the School had somewhat the nature of improvisation; perhaps that is unavoidable but it is necessary that at least the coordination of lectures to be presented during the school should be done before the beginning of the course. This would be better for the whole level of lecturing and discussions.

Now, I come to a more important point. As it was announced, the school was intended for people who have some interest in disarmament matters and wish to do more in this field, and for people already working in this field who want to specialize more in certain specific topics. I think it would have been better if the participants had been furnished with some basic material in advance, or at least during the first days of the school. Then the lectures could start from a somewhat higher level. It might also be useful if some lectures in a specific field take place, to furnish people with some basic concepts and basic conclusions of a special discipline concerning these matters. So, you mentioned something as a cleavage between people who have done nothing and people who have done something in this field. I don't know if this rests a so important one if you take these two measures, first, to furnish everybody with some basic material about what about disarmament problems in general and in the second place to furnish them with the basic matters of special fields in this disarmament matter. Then it would have been, for instance, more possible for some of us to follow usefully the very good lectures, in my opinion, of the two Italian professors; and also the very good lecture, in my opinion, by Ambassador Cavalletti.

And now I come to my last point, and I hope that you will not think that I am a victim of a professional ideology, when I say that sociological and psychological aspects of disarmament problems are really important. Therefore, if you announce at such a School

that problems will be mentioned and discussions will take place on such problems, you have to furnish and to cover these issues with at least one professional man in this field, I think. As you may know; there is an organization named I.P.R.A.; social scientists are rather active in the field of peace and also; the International Sociological Association has a special section of professors and other scientists who work in this section which is called "Military Sociology"; that is, the sociology of war and disarmament. In this Section a lot of very good scientists are working and doing something, and we have a special meeting of the Section at Erian in France in September, and many papers will be delivered. So perhaps something is needed in this field and, if you announce that this School will deal with special fields, you have to cover such an issue, I think. This is not only my problem, but I say it now of course because it is the problem of all participants. These are fairly critical remarks, but I have to say them, I believe in the interests of the School as I am very convinced of the usefulness of this school.

AMALDI I thank you very much for what you have said. You pointed out essentially four points and I will say a few words about the first three and then maybe Schaerf will add something about the fourth.

The first point was to limit interventions from the floor to a rather short time, so that there is a possibility for everybody to participate in the discussions. I think you are perfectly right; I am aware of that. Unfortunately, we did not say it before we started and once you start in a certain way, it is difficult to say, at a certain moment, From this moment on, we leave only five minutes for interventions. The second point you made is about coordination of lectures. What one could do perhaps next time if a similar school is organized is to ask the various lecturers to send their written lectures in advance so that they could be typed and distributed. With such an organization we could perhaps concentrate on more advanced and detailed

discussions because everybody would arrive at the school with certain basic information. I agree completely with this point.

The third point is to provide the participants of the school certain basic material about the matters that are going to be discussed in the School; and also with this I agree completely.

Finally I would like to make two general remarks. There is a certain improvization we agree, that was however due to the fact that this was the first time we were doing it. Secondly you should consider that this School has been started by the Italian Fugwash Group which consists essentially of physicists and of some biologists and only a few persons who do not belong to these natural sciences. So, I should say that, when discussed with Schaerf, Calogero, Bertotti and others, the organization of this school, we really didn't know what would happen. We were really very much afraid; we didn't know if we would get only very few people applying to the school: we did not know. It could have been that we sent around announcements and then only very few people would attend while we had invited ten or twelve people to lecture some of whom like Epstein were coming for ten days from the United States. We were afraid of that! This, together with the fact that we were mainly physicists and biologists may explain why preparing this type of school, we certainly were not good enough to take care of the other aspects which are, we agree, of extreme importance for those having to do with sociology and other sciences of this type. So, I agree and accept completely your remark. I think however that Schaerf could say a few words more about the problem of the participation by experts in sociology.

SCHAERF I will make just a few remarks. The first, on what Calogero calls the big absentees at the School. With regard to China, we made only some efforts in that direction. We just sent a few posters to the Academia Sinica, but we never learned whether they actually arrived.

On the other hand, regarding Russia, we made great efforts: we wrote letters and went to their offices

bringing our material. Everybody was very nice, but unfortunately, they couldn't give any definite answer because they were previously committed. They cooperated as best they could under the circumstances but their attendance at the School wasn't possible.

What happened to France? I contacted many persons there and I must say that the first encouragement to the School came from Père Dubarle in France; but then we were in the wrong period because June is examination time there. Everyone connected to a university was tied down due to these exams. We invited Rosensthiel who is a Sous Directeur du Groupe des Hautes Etudes Mathématiques, and he thought it over for a few months, but then turned it down. We also invited general Beaufre and this was a little complicated because sometimes he wasn't sure he could make it for more than a few days and finally declined a month before the School started because he was going to be in the United States at the same time.

In trying to cover the sociological problems, we wrote to Mr. Galtung, and he suggested that we ask his wife; but it didn't work out in her case either since she had a tight schedule and the School just didn't fit in. So this point in a certain sense, was uncovered by accident rather than by decision. I must admit that we were in difficulty in finding people in this field because we didn't know too many when it wasn't possible for one of these few to attend, we found ourselves with no list of reserves.

To give you some idea of our many problems, I would like to give you a little background information on the organization of the School. We knew we had the money to finance this School only in February. Consequently, it was only late in February that we could make the final decision to start this School. Before that time, we had only a few good friends who agreed to come here without any commitments on their part or on our part. I would like to mention with regard to this, Prof. Tom Stonier, Mr. William Epstein and Prof. Bernard Feld -- we went on a long time using these three names and try-

ing to get more friends. When we finally had the money, the time was running short. Prof. Karl Lapter, for example, was contacted by telephone and it was very nice of him to come at such a short notice.

AMALDI May I add another point. For instance, the problem that has been touched on by Schaerf of the fight for the money was not an easy one. We have written an incredible number of letters everywhere; and it is not easy to find somebody at a certain moment who says; We will give you the money to do that. Secondly, the reason why this period, which was not such a good one, was chosen and you probably noticed that even I had to slip away several times because of other commitments was because Villa Falconieri was available only during this period.

In any case, we appreciate very much your comments if we answer it is not because we wish to diminish the importance of your remarks; but we feel that they are very useful and we will bear them in mind.

Are there any other remarks of a general character?

FRIIS MØLLER I wish to associate myself with the remarks made by Mr. Niezing. I find it has been a very fine and fruitful experience to be here. I want to thank all of you who have spent a lot of time preparing this arrangement.

Last year I attended the Salzburg Seminar in American Studies, and the arrangements there were very similar to these: you live in the same house and you attend regular lectures followed by discussions, but there is one difference, and I think perhaps to the advantage of the Salzburg Seminar, because as always in such groups and discussions you get into subjects which are really so vast that you can go on forever; likewise you could discuss most of the subjects here for days and even for years: I think there is a need for some kind of specialization, with certain participants concentrating in one field and getting an opportunity to

analyse aspects of each specific question. At Salzburg they have lectures in the morning and in the afternoons, they have seminars: very small groups of four, six or eight people discussing one special aspect of the problem where you can go very much further in the analysis. This is just for your consideration, in case you plan to arrange another similar school.

AMALDI We accept completely this remark and we understand its point. This is the first time the school was tried and we thought it would be wise to cover a wide ground; it is quite obvious that if you cover a wide ground, then you lack in a certain sense, depth. In fact, in the future, it might be better to have an international summer school on more specific subjects.

BOSKMA* I also enjoyed having the privilege to attend the school and I am grateful to have been here. When you are analyzing the problem of peace, you notice two kinds of approaches; the first focusses on the actual situation and what is going on and what are the facts we should know and what can we do about them and so on. There I think that quite a lot of thinking and suggestions have been done in these two weeks. But, you can also imagine long term peace research which to a certain extent, might be even more important; that of course would be more of a sociological sort of thing as Niezing was discussing or actually it is a problem of groups which have conflict. How can you describe them? Is it possible to invent mathematical models? How can you analyze them? Can you try to set up simple mathematical models which could be fed into computers to see what will happen? I especially think of simulation games and things of this kind. Maybe both kinds of peace research are sufficient for a whole course.

AMALDI Are there any other remarks?

CICANOVIC I would like first of all to thank all the kind people who have organized this school and made it possible, since I find it has been very useful.

As far as practical suggestions are concerned: there is also of course, on my part the feeling that the

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scope of subjects was rather large; and that caused probably many things to be left unsaid simply because of the lack of time but probably for the first time this was unavoidable. Probably for future schools, which I hope will continue to be organized, not only on the part of the Italian Pugwash Movement, but in other countries as well, a narrower field as my friend Friis Møller said should probably be chosen, which would give much more opportunity not only for a detailed study because there is no time for serious study at any course whatever even if it may last a month, but to get an insight as far as participants are concerned into the most crucial points of the problem. We have touched here quite a lot of problems, and I feel that we have touched upon the most important matters as far as these subjects are concerned; so it is my desire to thank you all once again on my own behalf for your kindness and for the organization of this very useful experiment.

RUZKOVA * I only want to thank you very much for your hospitality that we have been enjoying these days. As for the school, I think it was a very happy and successful experiment. It should happen so many times again, and if you want to have experts for peace and for these questions that you are all interested in, we should be trained and we should have a good training. I suppose you will consider that in the future you will arrange such courses as were suggested or in some other practical way but I think it would be very good if you kept in mind this same program.

JORGENSEN As one of the participants who has not been too actively engaged in this meeting, I feel obliged to say a few words.

First of all, I wish to express my gratitude, as the other speakers have done up to now, for the organization and also for the very brilliant lectures we have heard here. I think most lecturers have by this time, left the meeting but even so, I want to do that.

I would like to say that moreover I have had many useful private talks with other participants here,

and I think that for me it has been one of the best things here. As for the criticisms: I might be able to repeat many of the other things that have already been said, but I will skip this. I will try to express some sort of criticism in a slightly different way, even if I aim at the same thing as have the others. I think that the lectures on a subject might have been divided more or less explicitly into two categories:

- 1) - One category trying to state the problem, its origin, its nature, its development in the past, and what has been done to solve the problem - politically and scientifically.
- 2) - One category outlining the visions for the future, what can be done to solve the problem, who can do it, and which solutions will we prefer. I think one might try to make some concrete progress in these subjects.

The first category of lectures would be of a more precise and concrete sort, whereas the second category would call upon imagination and discussion.

This is rather badly and abstractly expressed, but I can give a few examples. In our treatment of European Security problems I think we made a rather bad mixing of the categories mentioned above, namely on one hand what is our present situation in this problem and what is the history of the problem, and on the other hand which are our goals, and which specific things should you do to improve the situation, which measures could lead to the desired results?

The second example is peace research. I think that here we have put forward mostly the visions we have what kind of peace we want, positive peace and so on; but not very much on what is being done and what could be done.

STONIER I think that if one bears in mind that this is an experiment, obviously you did a phenomenal job. You had to coordinate four parameters, each of which gave you difficulty: the lecturers, the students, a

place, and money and to get those four together and to achieve a critical mass is no small task. You had no way of knowing how critical the mass would get and what would come out of it! We did not get an explosion; we did get peaceful coexistence! Even if no single lecture had been delivered, or had they all been bad, it still would have been worthwhile because of the private conversations. For me, if nothing else, the ability to talk at lunch time with a number of our Eastern European colleagues was extremely valuable, and I think that this was true for all of us we gained a lot of insight. The main function of these gatherings is after all, communication.

In general, I am in agreement with most of the criticisms that were made, except one, and that is : My feeling is not that we should specialize, in fact, I think we were not broad enough. Niezing was right, we should have sociologists next time and I think there definitely should be a next time. In fact, not only sociologists, but also psychologists, and for that matter, also theologians. There are moral dimensions, there are psychological dimensions, there are legal ones; disarmament is a multidimensional problem. Even if this first meeting was somewhat superficial, the synthesis of the subjects and participants here did create a climate of insight. I have a feeling that all of us are a little more sophisticated. And I think some of us have learned a great deal. I think we have laid the foundation for something in the future.

In any case, the three of you and the others associated with you, have done a very valuable job. I am most grateful!

AMALDI I would like to ask again for criticism, not for appraisal, but thank you so much, it is very nice of you. The purpose of the discussions is not just to say that we were clever that we know.

I would like to make a short remark in reply to some of your remarks of a general type. I agree completely that the school has been organized in a somewhat

amateurish way and this I think, is not a very good feature of the School. However, if I may express my personal feelings, I like somethings that are not too well organized; when things are too well organized I feel a bit embarrassed, like a coin put in a slot machine everything is too definite. Maybe this is just an able way of excusing ourselves for our incapacity to organize, but I think that, in a certain sense, if there is a certain lack of organization, we seem a little more human than when we are too well-organized.

Now I would like to know if there are any more criticisms or comments. If not, I thank you all because you have already expressed a view. About the convenience of repeating such a school, taking account of most of the remarks that you have made.

At this point I'd like to mention that besides Schaerf, Calogero and myself, there are various other people that have worked hard to organize the school. In particular, I should mention De Gasperi who has done a remarkable amount of work and has spent an enormous amount of time preparing letters and doing all sorts of secretarial work. It has been a great sacrifice for him to do this instead of doing his research work.

I would like to go back to the problem of when and where a summer school on disarmament should be organized again. First, I would like to note that it is not necessary that it will take place again in Italy. We are quite willing to repeat it in Italy, but it could be organized by some other group in some other country. Second; If we have to repeat, we think that before we make a decision, we would like to see our Proceedings published; we are not yet sure that we will succeed, but we will try to do our best for arriving to the publication. When the Proceedings do come out, looking back over a distance of time, we will clearly see if what is written there is worthwhile to be read not only by us, but by the other people and see if the school has accomplished something.

Therefore I think that a decision cannot be taken before one year from now and, if we have to

organize another school before that time, we would be quite happy and willing to help in the organization if desired.

(Following this discussion are the closing remarks by Prof. Amaldi).

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Editors Note :

These interventions have not been corrected by the participants :

- Cicanovic, Jorgensen, and Ruzkova.

DISCUSSION FOLLOWING MARKOVIC
THE ROLE OF SCIENCE IN REDUCING INTERNATIONAL
TENSION

(23/6/66 - 9:30)

LAPTEK: I would like to question whether in reality the Vietnamese war had started just because Vietnam is an underdeveloped country. This seems to be a much more complicated problem and the question of south Vietnam, being an underdeveloped country plays under circumstances of a rather secondary role. Therefore, I would rather support the statement that was made in Adis Ababa by the committee of the Pugwash Movement. Either way you look upon the problem of the development of the economically underdeveloped countries, you have to recognize that only their own efforts could build the base for their development, although at the same time the problem of an outside help, although secondary is of an enormous importance.

On another occasion we found that the U.S.A. could free about 10 billions dollars per year without disturbing their economy. If that sum could be given to the undeveloped countries and if they could get another 10 billions per year from another sources that would be a real help, only if they themselves would be able to get from their own sources, by their own effort sources many fold bigger than outside help. Vietnam is an example as to how the aid should not be given, the help in Vietnam is given either to a small corrupted group which uses it for a private interests or in the form of arms and men that destroy the country and endanger the lives and peace not only in South East Asia.

Few words on the discipline of international relations, I agree that, certainly, they have not reached the level of natural science, but, on the other hand, it has to be stressed that this discipline is a very young one. Some progress was made only in the last fifty or perhaps twenty years. It is generally accepted among the scientists of international relations however, that they deal generally speaking with three most important factors i.e. objective factors and they deal with two problems: the objective factors: one representing the activities of the given state or group of states and their impact on the rest of the world and another one is the impact of the outside world on the given state or group of states. This interplay of the two objective forces the inside and the outside ones forms the changing world reality. But how to

find out in what direction to move, how use the possibilities that advise to the benefis of the given country if you are one of the decision makers. They have to count with the outside and the domestic situation, as they see it and they see it in a distorted mirror of the present and future interests. They have to decide though they know that neither the data they possess nor their picture of the future are not and would not be exact. They are, therefore, more offen than not, and not only in such problems as what is or what is not in the national interest, but even they do not know if the step they are making will serve their own interests. Therefore they usually decide in a manner that represents more the result of various pressures than of an intelligent and calculated design.

MARKOVIC Well, we agree on the second problem but we cannot agree on the first. The problem is this: whether we should wait for the relaxation of international tension in order to increase the existing very meager assistance to developing countries or much more must be done already now in order to achieve this increase. Any view which leads to the practical conclusion that this problem of developing countries should be postponed for some better time and that for the time being these countries must rely on their own efforts, any such views, is, it seems to me, rather unrealistic and perhaps to some extent even irrational.

What is the opinion of experts on this issue? I would like to mention perhaps Woods, the president of the International Bank for Development, according to whom, with the present trend of economic growth one cannot even expect that until the end of this century there will be any increase in the living standards of about half the world's population. So it seems that the present economic social and political situation many developing countries simply cannot solve the problem. On the other hand, there is relatively fast growth of population; on the other hand, a much slower growth of productivity is evident. These countries do not have capital enough to invest into technological industrial development. Meanwhile the growth of population is so great because in many cases the kind of the products of modern civilization which relatively easily penetrate into developing countries are products in the field of medicine. They are much cheaper than any means

for technological and economic development and there is an air of humanity in sending them to those miserable Asians and Africans who still die like flies from diseases long forgotten in the West? As a consequence there is a demographical explosion just in those countries where, because of the lack of capital, the investment and production growth rate is lagging behind the world average rate. For example, there is this interesting fact that wide spread spraying of Ceylon with DDT resulted in the decrease of mortality by 35% in one year alone. While the world population growth increased (according to Harrison Brown's A World Without War), from less than 1% to 1.6% now, you have the rate of growth of population in Costa Rica of 3.7% per year, in Mexico 2.9%, Ceylon, 2.8%, Puerto Rico 2.8%, and so on. Such discrepancies between demographical and economic trends create problems which many countries are unable to solve.

You mentioned Russia in the twenties in comparison with China today. The problem of primitive accumulation in these countries had to be solved in a rather cruel way. Shall we say : let every country pass through such a period? Such an approach would remind of a rather cynical attitude of some older revolutionaries who sometimes used to think : "The worse the situation is - the better prospects for the cause. " However, in the present international political and military situation this attitude, even if we disregard all humanist considerations, might have very grave consequences for the world as a whole. The United States being as they are, react to any change in the world's status quo as a kind of immediate danger, as the aggression of communism on the free world, etc. But the Soviet Union and China on the other hand, cannot remain passive when facing such a violent American military intervention. There are certain demands of international socialist solidarity which they cannot disregard. All this leads the world to the brink of war.

So , it is quite clear that we are confronted with the following dilemma: either we want a series of such situations and it is very probable that one of them

would lead to a further escalation and World War III, or, material and social progress in developing countries must be secured in some alternative way which would not lead to utterly dangerous international crises. According to the Marxist theory, a revolution (in the sense of social transformation by force) is necessary way of solving problems only when there is no other way. There is nothing in the Marxist theory to say that it would not be preferable solution if those social problems could be solved in a peaceful and a more humane way. For example, Marx said that in England, at least, such a peaceful transformation of society was possible.

So here is, I think the common interest of the world as a whole and especially the great powers, to enable developing countries (at least those who wish to receive assistance) to accumulate enough capital, without using any brutal forms, to make necessary investments and to reach a rate of productivity growth which would be greater than the rate of population growth.

AMALDI I agree completely with Markovic and Lapter on the urgent necessity of organizing in the most efficient way and as fast as possible a widescale system of economic and technical help to developing countries. This idea is certainly shared by many people in many countries of the world. There is however, a point that always worries me as soon as one starts to think in terms of a possible practical application of these general ideas. In each physical phenomenon there are "intrinsic times" involved, which are typical of the considered phenomenon, and usually cannot be changed by the experimenter. I am not an economist nor a socialist, but I am inclined to believe that also social phenomena involve intrinsic times on which we can do very little.

The existence of such times always much too long with respect to our expectation and desire, provide in a certain sense a justification of the revolutionary approach that, from time to time, is adopted in order to change rapidly a situation which otherwise would change much too slowly. But then there is always a number of direct and indirect negative consequences of the revolution and the recovery from these involves again "intrinsic times" that we cannot reduce as we would like. I suspect that a similar argument holds for the economic help

to developing countries. I am afraid that, even if all big and small powers of the world arrive to a satisfactory agreement and succeed in organizing a system of economic help to developing countries, the beneficial consequences of such an action will take a rather long interval of time to become clearly apparent, while the people belonging to the developing countries feel very strongly that this way of living should be changed rapidly.

Only a sufficiently deep investigation made by economists and sociologists could clarify which is the best procedure that should be adopted in order to reduce as much as possible the "times involved" in a specific social and economic change of the situation in a given country or group of countries.

It is clear to me that one should start as soon as possible to set up a system of economic and social help to the developing countries without waiting that the problem that I have mentioned has been clarified; but I believe that in parallel with the practical and direct approach to the problem one should make a big effort for finding out the most rapid way to obtain the desired result as fast as possible.

MARKOVIC: The nuclear scientists give a good lesson. What they do in relation to their governments is this: We should try to solve problems, for example, technical problems in connection with arms control and disarmament. We give you the most rational solution and urge you to use them, if you want to behave in a rational way. Of course there is hardly anything more that we can do than to make efforts to convince responsible politicians and to create a public opinion which would exert pressure on politicians. In some cases there might be a common interest, a very important common interest on both sides. In such cases there is a good chance that if the solutions of problems are presented, they might be accepted at least partly.

CALOGERO: Going back to the involvement of scientists in public affairs, I would like to stress that one of the main tasks of scientists should be to inform public opinion and the political leaders about facts. In particular, concerning the nature of nuclear war, there is a special need of information in those countries which up to now have not been confronted

with real operative decisions in this field. In fact in such countries - for instance, in Italy - there is almost complete ignorance - not only in public opinion at large but also in the élite opinion and the political circles - about the nature of nuclear war. There is ignorance about the effects, the physical effects of a nuclear war, and much more important, there is no understanding of the strategic framework. The political leaders in most countries, other than the nuclear power, are completely unaware of the real terms of discussion in this field; this is of course very bad, because it implies that even if they wish to exert positive influence, they in fact cannot, because they are always outside the real terms of the discussions. As far as the unawareness of the political leaders is concerned, I think a good example is the problem which confronted Truman when the decision whether to drop nuclear weapons in Japan had to be taken.

A second point concerns the aid to developing countries. It seems to me that often the first economic result of aid is negative, and this is due to humanitarian reasons. In fact the immediate results of aid is to curb infant mortality, which results in population increase; and this makes it impossible for the country to start economic development. This is a somewhat simplified picture but it is essentially correct. I think that it is a responsibility for a country that gives aid to try and maintain the balance between birth and death rates. Scientists should try to explain that the two things must go together. Thus essentially the choice between birth control or infant mortality. This awareness might help to put the so called "moral" objections to birth control into the proper perspective.

MARKOVIC I agree with you and I would like to add a few more details about the very interesting story of the decision to drop these two bombs on Hiroshima and Nagasaki. We must be really grateful to this man, American Secretary of War in 1945, Stevenson, who told the whole story. What is very interesting, beside what I have already said is this: First, Truman did not know anything about the development of the Manhattan Project until Roosevelt,

who was in the course of all things, died. So he obviously had not had time to learn enough about the consequences of using these bombs. Second, he only approved a memorandum which was prepared by Stevenson. The memorandum already expressed the decision and Stevenson said this memorandum was met with approval. This is how the decision was taken. In the period between July 2nd and August 6th Truman was not able to change anything in the matter. It is interesting when you study this memorandum that two things were not mentioned at all. One is the expected participation of the Red Army in the invasion of Japan, which obviously had to be one of the essential elements in the estimate of how long the war would last. So, only without this element one might be able to understand why in the memorandum the estimate was made that without throwing the bomb the war would last until the second part of 1946 and it would have so many fatalities. Another thing which was missing in the memorandum was that even the very term "atomic bomb" was not used at all. A symbol S2 was mentioned instead. Stevenson explains that for reasons of secrecy they never used the term "atom bomb". However, psychologically, it is quite clear that it was easier for Truman to approve a decision expressed in a memorandum where you don't mention nuclear weapons and don't speak about all the consequences of its use.

It does not follow from what I have said that perhaps the final decision would have been different but this mechanism of decision making is very interesting and it helps us to understand how other similar decisions can be taken.

LAPTER I would like only to clear some misunderstandings, as I think I was misunderstood by Prof. Markovic. I already stated that I am for help for the developing countries. It is both the duty and enlightened self interest that should dictate the developed countries to give as much and even more than they could afford. What I wanted to stress is that aid even under the best of conditions could form an important factor but not the most important one. It would form perhaps 10 per cent. of the necessary capital. And then I do not see a direct connection between the amount

of help given and the rate of economic and social progress in that country you can give quite a lot of help with no visible economic result or social progress. There are laws governing the internal situation and the problem of aid and the amount of aid influences them but not in a decisive way. And let me state in passing that I am for social progress by peaceful means as far as the circumstances permit the use of such means .

MARKOVIC I never doubted that you were for social progress and generally we agree in most things. I would especially like to make it clear that I also think that those developing countries, nations of those countries, must make very great efforts themselves instead of just waiting for some assistance. The only place where we disagree, is when you said you supported the statement in which it was explicitly said that the increase of assistance depends on the relaxation of international tension while I think it is in fact one of the major conditions for relaxation. Otherwise I think that we agree in everything else.

STONIER I wish to make two short points. One deals with the relationship of scientists to their political leaders as exemplified by the bombing of Hiroshima; The memorandum of the scientists to President Truman asking him not to drop the bomb on a city, never got to Truman it went no further than General Leslie R. Groves, who was in charge of the Manhattan Project. One must recognize these organizational complications too.

The second point is in respect to population problems leading to instability: If the population had grown since the time of the birth of Christ up to today, at the same rate at which it is growing today, we would have had of the order of several people per square foot of all the earth. But the problem is not that there has been a significant change in the birth rate but as Calogero pointed out, the difference is chiefly caused by the shift in the death rate, particularly infant mortality. In Egypt for example, since the beginning of the building of the Aswan Dam, the additional amount of land that will be cultivated will not be sufficient to support the increase

in population beyond 1972. Thus we are creating a long-term instability which is bound to lead to war. One of the things we can do as scientists is to present these data to the public and hope that the negative attitudes on population control which are currently held by some religious and other groups, are brought sufficiently up to date to permit a constructive attack on this very basic problem.