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THE STAGES OF ECONOMIC GROWTH
AND THE
PROBLEMS OF PEACEFUL CO-EXISTENCE

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Introduction

I have been asked to talk to you today--and to initiate a discussion on the question: The Stages of Economic Growth and the Problems of Peaceful Co-existence. I regard this assignment as a privilege and a responsibility. The issue of Soviet-American relations--and of peaceful co-existence between our two countries--is evidently one of the great issues of our century; and for an American, asked to speak on these matters in Moscow in May 1959, this must be a serious occasion. But it is, if I may say so, wholly proper that such occasions should take place.

First of all, this is an Institute dedicated to the scientific study of World Economy and International Relations; and, as some of you know, at M.I.T., I am both a professor of economic history and a working member of our Center for International Studies. We--you and I--are interested in these matters not merely as citizens of our nations and of this planet; but also as scholars. And there is every reason for us to exchange our scientific reflections in this as in other fields.

But there is another reason as well that I am pleased to have been invited to talk on this subject. Both our governments are now launched on policies of cultural exchange. I, for one, approve of such exchanges, and I hope they will

expand in many directions. There is simple human good in letting men travel over the horizon to see and to be seen. It is good that we should see the Bolshoi Ballet and you should see Porgy and Bess. It is good for our physical scientists and technicians of all sorts to exchange new knowledge. But in the end, when the ground is cleared a little--when we have learned to drink vodka, and you, bourbon--we must try to talk with candor about the great issues that divide us. It is important that we should come to know in our hearts that we are all part of common humanity--that we are all God's children. But cultural exchanges by themselves are no guarantee of peace. Nations have fought that understood each other very well. Neither we gathered here--nor our peoples--should be deluded that an enlarged flow of tourist traffic is enough. Therefore, I look forward to our discussion today as a form of cultural exchange at a serious level; and I welcome your initiative which has led to this gathering.

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What I plan to do this afternoon is to open a discussion with you by discussing three themes.

First, the stages of economic growth. I have gradually come to the view over the past twenty years that it is possible and useful to generalize the pattern of modern economic history in the form of a series of stages of economic growth, of which one stage--the take-off--may already be known to you. In the first part of my lecture I shall try briefly to summarize this scheme, which will soon be available to you in published form, at greater length. It is, as you will quickly perceive, my alternative to the system of historical analysis developed by Karl Marx.

Second, after outlining the stages of growth, I shall consider the position in Asia, the Middle East, Africa and Latin America in terms of the stages of

growth; I shall define their key domestic problems of policy; and I shall consider the implications of their problems for the issue of Soviet-American co-existence in the underdeveloped areas.

Third, I shall examine what light the stages of growth throw on the problem of bringing the arms race to an end and on the problem of creating a system of world order within which nations of different culture, different ideological complexion, and different stages of growth may live on this small planet in tolerable harmony.

These are, of course, impossibly large subjects to exhaust in a single lecture. But my objective is not to persuade you in this hour. My objective is to open a discussion--a discussion which I hope will be continued. I think I can promise any one of you a similar audience in my home town of Cambridge, Massachusetts; and I hope the discussion this afternoon--after my talk--will be as long and lively as the one which we would have in Cambridge, on the occasion of such a visit from Moscow.

The Stages of Economic Growth

Now, what are these stages of economic growth? I believe all societies, past and present, may be usefully designated as falling within one of the five following categories. I designate these categories the traditional society; the preconditions for take-off; the take-off; the drive to maturity; and the age of high mass consumption. Beyond the age of high mass consumption lie the problems and possibilities which are beginning to arise in a few societies, and which may arise generally when diminishing relative marginal utility sets in for real income itself--that is, when the problems and burdens of scarcity gradually retreat, and what Karl Marx called Communism is approached.

These five stages of growth are based on a dynamic theory of production. Out of this theory comes one key proposition. The key proposition is this: at any period of time the momentum of an economy is maintained by the rapid rate of growth in a relatively few key, leading sectors. In some periods cotton textiles have been a key leading sector; in others railways, chemicals, electricity and the automobile have served this function. The importance of these key sectors does not lie merely in their own high growth rate, but in the consequences of their rapid expansion. Specifically, key sectors have two effects: their rapid growth sets up a direct demand for new inputs: the whole Leontief-Kantorovich chain that lies behind the new sector is activated; second, the development of these new primary and secondary sectors induces new developments indirectly, elsewhere in the economy. What we western economists call external economy effects are set in motion. (When, for example, Sweden, lacking coal, plunged into the electrification of its railways, it not only saved coal but laid the basis indirectly for a first-class electrical engineering industry.)

Each stage of growth can be directly related to certain leading sectors; but before considering the leading sectors associated with each stage of growth we must look at the second characteristic of these stages--the demand side as opposed to the side of supply and technology.

Each stage of growth is associated with certain ranges of income and types of demand. All that economists group under the headings of income and price elasticity of demand is relevant to the stages of growth analysis. But we must go beyond mere technical economic analysis. For at each stage of growth societies have been confronted with choices--basic choices of policy and of value--which transcend economic analysis.

Let me give a few illustrations of these non-economic choices that have had profound economic consequences. How, for example, should the traditional society

react to the intrusion of a more advanced power: with cohesion, promptness and vigor like the Japanese in the third quarter of the 19th century; making a virtue of apathy like the oppressed Irish of the 18th century; by slowly and reluctantly altering the traditional society like the Chinese after the Opium Wars?

When modern nationhood is achieved, how--in what proportions--should the national energies be disposed: in external aggression, to right old wrongs or to exploit newly created or perceived possibilities for enlarged national power; in completing and refining the political victory of the new national government over old regional interests; or in modernizing the economy?

Once growth is under way with the take-off, to what extent should the requirements of diffusing modern technology and increasing rate of growth be moderated by the desire to increase consumption per capita and to increase welfare? When technological maturity is reached--and the nation commands a modernized and differentiated industrial machine--to what ends should it be put, and in what proportions: to increase social and human security, including leisure; to expand consumption into the range of durable consumer goods and services; or to increase the nation's stature and power on the world scene?

These are not merely patterns of choice confronted in history. I am sure that if you pause a moment you can think of parts of the contemporary world where precisely these choices are now confronted: how to react to external intrusion; how, in the preconditions, to channel the underlying national sentiment; how, in the take-off, to weigh the rate of growth against human welfare; how at technological maturity to weigh domestic welfare against the expansion of national power on the world scene.

The stages of growth are, then, not a set of rigid, inevitable predetermined phases of history. The process of growth does pose for men and societies certain

concrete problems and possibilities from which they must choose, and these problems and possibilities may be observed at similar stages in each society. Modern history can be viewed as the consequence of differing choices made by various societies, at various stages of their growth. But if we really believed history was inevitable I would not be standing before you this afternoon and you would not be listening to me.

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Now, very briefly indeed, a few words about each stage of growth.

I define the traditional society as one which has not learned to make invention and technological innovation a regular flow. The traditional society is not static; but its growth is constrained by a productivity ceiling beyond which it cannot penetrate. This ceiling decrees that something like 75% of the labor force will be in agriculture; that its income above minimum consumption levels is likely to be dissipated in high living for those who command land rents--or otherwise dissipated; that its social values will be geared to relatively limited fatalistic horizons; and that political power will reside in the regions, with those who own the land; although there may be fluctuating tension with those who--along with their soldiers and civil servants--exercise central authority.

Historically, the traditional societies of western Europe were stirred into what I call the preconditions for take-off by the expansion of trade, from, let us say, the 16th century forward. The rise of trade interacted with the development of modern science, invention and innovation to produce an interlocking series of developments in transport, industry and agriculture, as well as a rise in population. In the 18th century, France, Netherlands and Britain were--like three race horses--jockeying towards the starting line; but Britain was the first to move from the preconditions into take-off.

Once the British take-off--or industrial revolution--was underway from, say, 1783, it had a profound effect on other societies. It set in motion a series of what might be called positive and negative demonstration effects. These demonstration effects are still operating actively in the world--and, in the end, they will bring industrialization to virtually the whole of the planet. The last major take-off may well begin before two centuries have passed since the British showed the way.

Technically, there are three leading sectors in the preconditions period whose transformation is a necessary condition for sustained industrial growth. First, agriculture. A productivity revolution in agriculture is required to feed the expanding population of the preconditions period and to feed the cities, likely to be expanding at even higher rates than the average. Second, the export sector: industrialization in its earliest stages is likely to create an expanded bill for imports, which can only be met by applying quickly modern techniques to the extraction and higher processing of some natural resource. Third, social overhead capital. The technical transformation of a traditional society into a position where growth becomes relatively automatic requires large outlays on transport, education, sources of power, and so on. Here then--in the past and at present--are the three key sectors of the transition period, within which modern manufacturing sectors can begin to develop and then expand, as profits are ploughed back into new capacity.

But the development of these sectors is not an antiseptic technical process: it requires profound social, psychological and political change--from the attitudes of peasants to those of civil servants and politicians. Much analysis--both Marxist and non-Marxist--has emphasized the role of the new commercial and industrial middle class in bringing about this transformation. And the role of the middle class and the profit motive is surely a part of the

story. But it is only a part of the story. Both in the contemporary world and in the more distant past it is perfectly clear that there was another factor. That second factor was the negative demonstration that more advanced societies could impose their will on the less advanced. This demonstration of the national and human costs of backwardness has accelerated the preconditions process in many lands. A reactive nationalism has been a major factor in leading men to take the steps necessary to permit growth to become a society's normal condition. This was so for the transitional periods of Germany, Japan and Russia in the 19th century; and, earlier, it played a crucial role in the formation of the United States under the Federalists. And it is perfectly evident that in the contemporary world the most powerful motive for modernization in the underdeveloped areas is not the profit motive of the middle class but the widespread desire to increase human and national dignity.

It is this basis of the preconditions period in a reactive nationalism that poses one of the key problems of the contemporary world; for nationalism may be diverted to external goals or ambitions or it may be channeled at home on the economic and social modernization of the society. It is, therefore, one of the technical preconditions for take-off that governments come to power in the transitional areas which are prepared to channel a high proportion of their peoples' energies, talents and resources on to the tasks of economic growth as opposed to other possible objectives. For the leading sectors of the preconditions-- a productivity revolution in agriculture, the generation of increased foreign exchange, and the build-up of social overhead capital--all require a significant degree of governmental leadership and programming; phrases not to be confused with total government ownership and total planning, which I do not believe to be necessary conditions for the preconditions period.

And so, there comes a stage in the life of a society, after the technical, economic and non-economic processes of preconditioning have moved forward, when the take-off finally occurs. Some take-offs have been triggered by a political event--like the Meiji Restoration in Japan or the Chinese and Indian Five Year Plan of this decade. Some have been triggered by a technical event, like the coming of the railways to the United States in the 1840's and 1850's and to Canada and Russia in the 1880's and 1890's.

Since my view of the take-off is available to you in an article in the Economic Journal of March 1956 I shall not spend much time on it here. In essence the take-off consists of the achievement of rapid growth in a limited group of leading sectors: textiles for Great Britain; railroads for the United States, France, Germany, Canada and Russia; modern timber cutting and railroads in Sweden. The take-off is distinguished from earlier industrial surges by the fact that growth becomes self-sustained. Investment rises and remains over 10% net, sufficient to outstrip population growth and to make an increase in output per capita a regular condition. The momentum in the three key sectors of the preconditions must be maintained; that is in agriculture, foreign trade and social overhead capital. And the economy must demonstrate that it has the corps of technicians and managers, as well as the institutions of capital formation to suffer structural shock; to redispose its investment resources; and to resume growth.

After take-off there follows what I call the drive to maturity. There are a variety of ways a stage of economic maturity might be defined; for example, in terms of income per head or the structure of the working force. But I have chosen to define it as the period when a society has effectively applied the range of (then) modern technology to the bulk of its resources. During the drive to maturity the industrial process is differentiated, with new leading

sectors gathering momentum to supplant the older leading sectors of the take-off. After the railway take-offs of the 19th century--with coal, iron and heavy engineering at the center of the growth process--it is steel, the new ships, chemicals, electricity and the products of the modern machine tool that dominate the economy and sustain the over-all rate of growth. This is also the case with the Russian drive to maturity in, say, the quarter century after 1929, an historic sequence which bears a family resemblance to the American and Western European drives to maturity of the pre-1914 era, although the Soviet experience occurred in a somewhat different technological context.

I would offer the following sample as rough symbolic dates for the arrival of various societies at technological maturity, as I have defined it:

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|-----------------|------|
| Great Britain | 1850 |
| United States | 1900 |
| Germany, France | 1910 |
| Sweden | 1930 |
| Japan | 1940 |
| USSR, Canada | 1950 |

These dates, for maturity, come more or less sixty years after the dates established for the beginning of take-off. There is no body of scientific argument or evidence I can now offer to make rational such a uniformity. But it may be that when we explore the implications of some six decades of geometric progression applied to the capital stock, in combination with three generations of men living under an environment of growth, elements of rationality will emerge. For the moment, however, I would regard the sixty year interval between take-off and technological maturity as a rough benchmark at best, pending more serious study.

As societies move towards technological maturity a number of technical and non-economic changes occur: the working force not only becomes more urban but the category of semi-skilled and white collar workers expand; real incomes and

standards of consumption rise; the professional managers begin to take over from the original buccaneers who launched the take-off and dominate the early stages of the drive to maturity. But there is a deeper change as well, reflected in literature, social and popular thought, and in politics: What is that change? Men react against the harshness of the drive to maturity; they begin to take growth and the spread of technology for granted; they cease to regard the further spread of modern technology as a sufficient human and social objective; and they ask this question: How shall this mature, industrial machine, with compound interest built firmly into its structure--how shall it be used? As I suggested earlier there are essentially three directions in which the mature nation can go: towards social security and leisure; towards the expansion of power on the world scene; or towards what I call the age of high mass consumption; that is, the age when economic growth is dominated by the diffusion of the mass automobile, improved housing, and the electric-powered household gadgetry--from iceboxes to TV--that an industrial civilization can offer to make life easier, more pleasant, and more interesting in the home.

I believe a great deal of the history of the 20th century can be told in terms of the pattern and sequence of choices made by the technologically mature societies. For example, American history in this century reflects, at different times, elements of each choice. There was the brief American flirtation with world power at the turn of the century. Then there was a phase of social reform in the progressive era, followed by the plunge in the 1920's into the age of high mass consumption, with its new leading sectors: automobiles, rubber, oil, roads, suburban housing, and the familiar gadgetry. As for the Germans, at maturity they were terribly tempted and twice succumbed to the temptations of pressing for world power, and as Japan came to technological maturity in the 1930's it did the same. I will not go this afternoon in this opening statement

into an analysis of the inter-war years--but, in general, Western Europe failed to move at that time fully into the age of high mass consumption. But, in the past decade Western Europe has made that transition and is now experiencing a version of the American 1920's. And, in Japan, (at lower levels) something of the same is happening. This new phase of growth had given these economies a momentum not even the greatest optimists predicted just after the Second World War.

As for the Soviet Union, in the 1920's it reorganized the society which had experienced a take-off between 1890 and 1914, but had broken down under the terrible pressures of the First World War. Then, in 1929, the drive to maturity began, and it was resumed with great energy after reconstruction of the damage of the Second World War. This sequence then, since the 1890's, brings the Soviet Union to the point where the three-way choice of the technologically mature society now confronts its political life. That is, in what proportions shall the resources of the society be used to insure leisure, guarantee human welfare, to increase consumption; or to seek increased power on the world scene.

What does the contemporary world look like, then, from the perspective of the stages of economic growth? In the United States we see a society having virtually completed the revolutionary experience of the age of high mass consumption, turning at the margin to enlarged families and the values of intensified private life. In Western Europe we see societies at various stages--for Southern Italy, for example, is only at the end of the preconditions period--but by and large caught up in the early stages of the age of high mass consumption. The Soviet Union, Poland and, perhaps, other parts of Eastern Europe are not far behind, facing--or almost facing--the choices that go with the achievement of technological maturity.

Meanwhile, of course, while the stages of growth have been moving forward since the end of the Second World War in reasonable order and briskness in the northwestern part of the world, in China and the southern half of the globe-- from the Celebes to Peru--a great historical drama has been unfolding; these vast societies, embracing the bulk of the world's population, have been accelerating the preconditions for take-off or actually moving into take-off. And it is to this second subject--the underdeveloped areas--the problems they confront and the problems they pose for peaceful co-existence--that I now turn.

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The first thing to be said about the underdeveloped areas is that, of course, they stand at various stages of the growth process. The phrase "underdeveloped" is inexact. Some of them are actually in the take-off: Mexico, for example, Argentina, Brazil, Venezuela, and above all China and India. These societies face many vicissitudes; but I believe the bases have been laid for sustained growth. The commitment to carry forward goes very deep. In China and India, for example, I do not believe--looking ahead over the next decade--that any of us can be confident of the political form those societies will assume; but they will, on the average, maintain investment rates that outstrip substantially current rates of population increase.

Elsewhere there are societies in the late stages of the preconditions period: Iran, Iraq, Egypt, Morocco, for example, and several of the Latin American states. Indonesia, Pakistan and Burma are only a little behind, if at all. I do not believe the beginnings of their take-offs are likely to be delayed more than a decade. But south of the Sahara in Africa there are societies close to the traditional stage which may have to pass through longer preconditioning processes before sustained growth can be undertaken. The question now arises: is

it scientifically correct to use my concept of the stages of growth derived from a generalization of the historical past to analyze the contemporary problems of the underdeveloped areas?

In part there is much that is familiar to the historian in the current scene. The technical problems of the preconditions still center about the three leading sectors of that stage: social overhead capital; the generation of increased exports; and a technological revolution in agriculture. The social and psychological transformations that must occur are, again, broadly familiar from the past: the problem of siphoning off of land rents into the modern sector; the changing of peasant attitudes; the training of a new leadership--public, private, or both in various combinations--capable of bringing modern techniques to bear in the various sectors of the economy. And, above all, we can again see, as in the past, that a reactive nationalism, tempted to move in directions other than economic growth, lies close to the heart of the political process in many of these regions.

But there is a major technical difference: the pool of technology available to these underdeveloped nations is greater than ever before. Other late-comers have enjoyed this advantage to a degree: Germany, Russia and Japan, for example, in the half century before the First World War, coming a bit later than Britain and the United States. But in degree we must admit that there is a substantial difference between the present and the past, stemming from the size of the pool of unapplied technology.

This difference, however, cuts both ways: it both complicates the problem of growth and offers the possibility of accelerating growth. It complicates growth because the availability of modern techniques of medicine and public health leads to a radical fall in death rates, which yields much higher rates of population increase than those in most transitional societies in the past.

Excepting the United States and Russia, population increase in the preconditions and take-off were under 1.5%--generally about 1%. And the United States and Russia had reserves of good land that permitted high rates of population increase to be sustained--reserves which are not now available to the underdeveloped areas in most parts of the world. These newer nations are trying to move forward with population increase rates of 2% and more. This means, in general, that higher rates of investment must be generated to achieve sustained growth; and, even more precisely, it means that the revolution in agricultural technique must be pressed forward with great vigor if the whole development process is not to be throttled for lack of food.

Now what about peaceful co-existence in the face of this problem. If the only objective in the world of the Soviet Union and the United States were to assist these new nations into sustained growth, technically what the more advanced countries should do is execute a joint program in three parts. First, to offer the underdeveloped areas ample supplies of capital--to ease the general problem of capital formation under regimes of high rates of population increase. Second, to offer these nations special assistance--to achieve prompt and radical increases in agricultural output--including supplies of chemical fertilizers and aid in building irrigation facilities. Third, we should conduct towards them policies which encourage the local politicians to concentrate their hopes and energies on the task of economic development. And we should avoid policies which divert them from these objectives.

Thus, if the problem of Soviet-American relations in the underdeveloped areas were merely technical, I think we could define the changes in policy in both Washington and Moscow, which would maximize the rate of modernization and ease the human problems in the underdeveloped areas.

The United States, for example, would have to do these four specific things: first, to accept the idea that its major objective in these areas was to create independent, modern, growing states, whether or not they were prepared to join in military alliance with the United States.

Second, the United States would have to accept each nation's right to choose its own balance between private and public enterprise; and so long as the growth process was seriously pursued, it would have to refrain from imposing as a condition for loans the acceptance of American patterns of organization on other societies.

Third, the United States would have to accept the fact that the democratic process is a matter of degree and direction and not expect these transitional societies to blossom forth promptly with forms of political organization similar to those of the United States and Western Europe.

Fourth, with these objectives and self-denying ordinances, it would have to offer substantial, long-term loans and technical assistance on which the local politicians and planners could count over, say, a five-year interval.

These are, as it were, the American conditions for a policy of peaceful co-existence in the underdeveloped areas. And I would now call your attention to an important fact.

Looked at closely, these are precisely the directions in which American policy has been moving in recent years. It lies behind the creation in 1957 of the Development Loan Fund and the recent initiatives in the United States Senate to enlarge that Fund and put it on a long-term basis. It is precisely this kind of thought which lay behind the President's proposal to the countries of the Middle East last August before the United Nations.

Many of us in the United States--including myself--believe this trend has not gone far enough; and as citizens we are pressing to see it further developed; but I believe an objective assessment will support the judgment that this is the trend in American policy.

Now what about Soviet policy? Leaving China and Eastern Europe apart, what is required from Moscow is a parallel set of shifts in policy. As you know, the bulk of Soviet lending outside the Communist Bloc has been localized in a few areas: Egypt, Syria and Iraq, Afghanistan, Yugoslavia and India. It is clear that in each of these areas excepting India, the Soviet Union has had clear, short-run strategic objectives--objectives other than increasing the rate of growth. In India, from all accounts, the Soviet steel plant and other technical assistance has been efficient and helpful; and it may be that the case of India will offer to us a chance to experiment more substantially with peaceful co-existence.

Overall, however, the Soviet economic assistance program would have to be substantially modified if it were to offer a basis for a serious collaborative effort with the United States in the underdeveloped areas. It is now, basically, a strategic program rather than a program designed to accelerate economic growth in the underdeveloped areas.

We all know, however, that the problem of co-existence is not merely a technical matter of collaboration in accelerating the process of economic growth. The presently underdeveloped areas are moving through the preconditions or into take-off in a world setting of Cold War--of intense ideological and military competition. If we are serious about the problem of competitive co-existence in the underdeveloped areas, the nature of this competition and its consequences must be candidly faced.

First let us look at the ideological problem. It is the general theme of much Communist thought in the underdeveloped areas that only a Communist dictatorship is capable of overcoming the social and psychological resistances to modernization and pressing forward into sustained economic growth. We in the West believe this is not the case. We believe--as a matter of history and of faith--that the problems of the preconditions and of the take-off can be overcome without the surrender of human liberty which the Communist formula requires.

I would not wish to enter into the discussion going forward in Communist countries as to whether there is one or there are many roads to socialism. But, as an historian and a social scientist, I would assert categorically that there are many roads to economic growth.

Whether my view and the western view is correct, this much we can say objectively about the conditions for peaceful co-existence in the underdeveloped areas: these nations must be left to decide for themselves. Co-existence demands that we leave the outcome of the ideological debate for the processes of history within each of these societies; and if we are serious in our concern for their fate, that they proceed to solve their problems in a setting where capital and technical assistance is made available to them, without strings concerning their political and military orientation.

You may recall the famous phrase of Mao-Tse-Tung, shortly after the Communist victory in China in 1949. He announced his intention to pursue a Lean-To-One-Side Policy. The condition of competitive co-existence in the underdeveloped areas is that we both pursue policies--both the United States and the Soviet Union--which encourage Stand-Up-Straight policies.

Now this is no easy matter, as we all know. We know that very strong impulses press your government and mine to think of the underdeveloped areas not merely in terms of economic growth, not merely in terms of ideological

orientation, but in terms of military and strategic importance. In the case of the United States, for example, a high proportion of our aid in recent years has been military aid. This aid has been given not because we enjoy making military pacts, but because the Korean War occurred. It is a fact of history that the truce lines of the Second World War were violated in Korea by organized, armed formations. And it is a fixed basis of American policy--and I am confident that it will remain so--that the United States will take any steps necessary to protect those truce lines. And it is a hard fact of history that these truce lines run through various of the underdeveloped regions, giving them a strategic character and complicating the problems of peaceful ideological competition as well as the problems of economic growth itself. Thus while we may be able to move some distance forward toward policies which make life and progress easier for the peoples in the underdeveloped areas, the greatest thing the Soviet Union and the United States could do for the areas is to bring the cold war and the arms race to an end--to make, at last, a serious peace.

I turn now, therefore, to the third of my themes: the relation between the stages of growth analysis and the problem of making peace.

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What is the situation we confront from which peace must be created?

The Soviet Union, Great Britain and the United States now have in their hands--and soon France and others will have in their hands--instruments which grossly surpass in their destructive power anything that has gone before; but their use presents the risk of triggering circumstances which will destroy the user and us all. In a technical sense what has happened is that the proportionality between industrial potential and usable military force--a proportionality which existed for about a century and a half--has now been violated.

In consequence, the military and foreign policies of the major powers are being conducted at two distinct and only tenuously related levels: one the level of mutual deterrence--of mutual frustration with weapons of mass destruction; the other, the softer level of diplomacy, economic policy, ideological competition, and conventional weapons of a low order, where the main business of the world goes on from day to day.

In this softer struggle the major powers operate under great restraint with respect to powers whose military potential in no way approximates their own. Setting aside the arms race among the industrial giants--which fills our minds with images of a bi-polar world--the fact is that effective power has been rapidly diffused since 1945. The paradox of the atomic weapons has permitted the lesser powers degrees of bargaining freedom they would not have if military force had not taken so violent and discontinuous a technical leap during the Second World War and after.

Tito began the exploitation of this paradox, in a sense, with his successful defiance of Stalin in 1948; but in different ways on different issues Nehru, Nasser, Ben-Gurion, Adenauer and many others have found ways of exploiting this paradox within the non-Communist world; and Mao and Gomulka as well as Tito have done it within the Communist Bloc. The lesser power cannot always pull it off; as the young Hungarians in Budapest discovered in 1956; but they were not defeated with atomic weapons. They were defeated in a police action by old-fashioned infantry and tanks--a victory for which the Soviet Union has had to pay a high price in the other area of struggle; that is, the non-military struggle of diplomacy and ideology. And the whole of the West--not merely Britain and France--paid a similar high price for the use of force at Suez, at about the same time.

In short, societies still in the preconditions period--like Egypt--or in the early stages of take-off--like India and China and Yugoslavia--have been able

to behave in world diplomacy on a significant range of issues--not on all issues; but over a significant range--as the equivalent of major mature powers; and this is due to the paradoxical character of the new weapons and the diffusion of effective power they have brought about.

In the longer run the diffusion of power will acquire a much firmer base than at present.

Just as the forward march of the stages of growth in the latter half of the 19th century shaped the world arena of the first half of the 20th--bringing Japan, Russia, Germany, France and the United States into the arena as major powers--so sequences of change long at work and gathering momentum in the post-1945 years are determining the somewhat new world arena now coming to life. For the central fact about the future of world power is the acceleration of the pre-conditions or the beginnings of take-off in the southern half of the world and in China. The arena over which the First and Second World Wars was fought--and the first phase of the cold war--ending with the Korean truce--no longer exists.

To make this idea still more concrete, accept for a moment my notion of a sixty year interval between take-off and technological maturity. We then can say that by 2000 or 2010--which is not very far away--India and China, with at least 2 billion souls between them, will be, in my sense, mature powers. They may not yet be rich. They may not be ready for the age of high mass consumption, although even this is not ruled out. But they will have the capacity to apply to their resources the full capabilities of (then) modern science and technology.

The central fact to which all nations must foreseeably accommodate their policies, then, is the likelihood that the arena of power will enlarge to become for the first time in history truly global; and that the centers of effective power within it will increase.

This is the setting in which your country and mine confront the problem of peace.

Technically the central problem of peace consists in the installation of a system of arms control and inspection within a level of armaments agreement which would offer all powers greater security than that now afforded by an arms race of mutual deterrence, with an increasing number of atomic powers in the game. Given the nature of modern weapons and the opportunities for their concealment, this in turn requires that all societies be opened up to inspectors who could, in effect, go anywhere, at any time, without notice.

An American newspaper I bought in Venice a few weeks ago reproduced a Soviet cartoon of the American concept of inspection: it showed quite recognizable American types, equipped with horn-rimmed spectacles and cameras climbing all over Soviet factories with great vigor--a kind of Intourist group running wild. And Mr. Khrushchev has several times referred to the American concept of inspection as espionage. Although I think inspection could be made more orderly than the cartoon suggested, essentially Mr. Khrushchev is correct. The alternative to the arms race is that all peoples come to live with inspectors from other nations wandering about our societies in quite a free way, with, perhaps, some United Nations photographic planes going overhead from time to time.

This is a quite revolutionary notion; and it is by no means an easy notion for our peoples or governments to accept. But it is the only response that will permit us to deal successfully with the threat which lies in the new weapons and in their gradual diffusion about the world. And I am convinced that, despite honest and well-founded doubts and worries the government of the United States would accept such a drastic alteration in national sovereignty if it were convinced that the inspection privileges within the Communist bloc were bona fide. And I am convinced--although this only you can decide--that it is the interest of the Soviet Union to accept such a policy.

Why should the Soviet Union now join in an effective system of arms control, based on relatively free inspection?

The prospect for the Soviet Union, as for the United States, is to see many new nations come into the world arena which neither the Soviet Union nor the United States can effectively control. As atomic weapon capabilities spread, these new nations will be in a position to take actions which might precipitate a war equally disastrous to Russian and to American interests.

As we look out on the world--with vast areas moving into the preconditions and the take-off, it is clear that history is creating a world of a good many middling powers. The Soviet Union and the United States stand at an interval of relative primacy; but that primacy is transient. We can use that interval to contest with one another; we can dissipate this interval in a cold war for which history will offer us little respect and little thanks; we can, clearly, destroy each other and most of the planet in a hot war, if we fail to maintain our poise and good sense. But there is also a great construction option open to us both. We can use this interval to create an effective system of arms control; and to concentrate our efforts, along with those of others, on making that system work. The common objective should be to make the system of arms control so solid and secure over the coming decades that as the new nations move to technological maturity, they enter a world of orderly politics rather than one where the power struggle persists with weapons of mass destruction still one of the pawns.

I am sure, from recent Soviet initiatives, that some perception of this problem already exists in your country. It certainly lies to some degree behind the emphasis on the urgency of ending H-bomb tests. This act would, in effect, freeze atomic weapons capabilities more or less where they are. But this approach cannot hold up, unless it is soon followed by the real thing; that is, an effective

international system of arms control. Put another way, the newer powers (China and India, for example), and some of the older powers (Germany and Japan, for example) are unlikely to permit atomic weapons capabilities to be limited to the Big Three or Four, while the cold war goes on in its old terms--merely without H-bomb tests.

In short, it is not a realistic option to conceive of a continued bilateral or trilateral world of atomic powers blocking the others out, but continuing the competitive game of cold war; nor is it a realistic option to conceive of a world controlled by Washington, by Moscow or by us both. We do have in our grasp one realistic option: it does lie within our grasp to make the terms and the setting within which power will be diffused, as new nations take off and march to maturity; but that is the historical limit of our powers. The diffusion of power can be rendered relatively safe or very dangerous; but it cannot be prevented. The process of growth and the stages at which various nations now stand rule out equally the notion of an American century, a Chinese century, a German century, a Japanese century or a Russian century.

I profoundly believe, therefore, that it is the interest of the Soviet Union to exercise this historic interval of option to join the United States in imposing mutually on one another the one thing the world would accept from the two great powers; that is, an effective system of arms control.

I know the problems in the United States that would make this policy difficult to bring to life; but, as I said earlier, I am convinced the United States is prepared to go forward. I think I understand some of the difficulties that this policy poses for the Soviet Union, and I have stated elsewhere my view of those Soviet difficulties. But you know Soviet problems better than I; and it is not for me to instruct you in this matter.

I would only say this much. When we think of alleviating the cold war, or finding the terms for peaceful co-existence--the first instinct of politicians--and of scholars who know something of the complexity of the world is to think of gradual solutions by small steps. And I am quite clear that the resolution I propose to you this afternoon will take time to clarify; time to think over and debate among ourselves; time to implement by negotiation. But of one thing I am convinced: we must think in terms of a radical solution to our common dangers. If we keep our heads and our sense of humor we have some time in hand; but not much. The passage of too much time and the march of the stages of growth may let this interval--when Russians and Americans still have the power of decision in their hands--pass beyond us.

My thesis about peaceful co-existence comes then to this. If the Soviet Union and the United States are to live in peaceful co-existence certain facts must be faced--facts which are, I believe, illuminated by our concept of the stages of growth. One fact is that, if we are to have peaceful co-existence in the underdeveloped areas, changes in both American and Soviet policy are necessary. I see signs of change in American policy; and I would be interested to know if you detect parallel changes in Soviet policy.

But the greatest contribution we both could make to the development of the underdeveloped areas would be to make a serious peace, ending the arms race. This would not merely free vast resources for peaceful purposes, including aid, for almost 20% of Soviet gross national product and 10% of the American gross national product are tied up in military outlays--but peace would lift from the underdeveloped areas the burden of being located at points of strategic competition. In such a setting, I believe we would find it quite possible for ideological competition to go on without grave danger.

Finally I have argued that the sequence of stages of growth gives to the Soviet Union and the United States a common interest and a common responsibility to end the arms race soon, by imposing on each other and simultaneously on others, through international negotiation, a system of arms control based on effective international inspection.

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Now, if I may, a final word, as a fellow economist and social scientist.

As you have gathered, I am not a Marxist. But on one point Marx was right and I share his view. The end of all this--the meaning of Marx historical sequence and the stages of growth--is not geometric progression forever. It is not an interminable race in index numbers of industrial production. The end of all this is the adventure of seeing what man can and will do when the pressure of scarcity is substantially lifted from him; when, in Marx's good phrase: "Labor itself is a prime necessity of life." We economists should take economics seriously--but not too seriously, recalling always Keynes' toast before the Royal Economic Society in 1945. "I give you," he said, "the toast of the Royal Economic Society, of economics and economists, who are the trustees not of civilization, but of the possibility of civilization." And we should bear this admonition in mind not only as an injunction to hasten the day when all can share the choices open in the stage of high mass consumption and beyond; but we should bear this injunction in mind in the process of moving to that stage.

Hundreds of millions of human beings must live in the world over the century or so until the age of high mass consumption becomes universal. They have the right to live their time in civilized settings, marked by a degree of respect for their uniqueness and for their dignity, marked by policies of balance in

their societies--not merely an obsession with statistics of production whose technical and philosophic ambiguities you understand quite as well as I do.

Man is a complex being, as the great artists and writers and thinkers of all countries have long since made clear. And human life is not a numbers racket.

Moreover, as an hypothesis of social science and a statement of faith: the goals we achieve in history cannot be separated from the means we use to achieve them. There may not be much civilization left to save unless we--all of us--you in a society having largely completed the drive to technological maturity, and rapidly moving beyond--I from a society only a bit further down the road--unless all of us deal with the challenge implicit in the stages of growth as they now stand in the world, at the full stretch of our idealism, as well as our energy and our technical talents.

I thank you with utmost sincerity for giving me this opportunity to talk to you; and I greatly look forward to the discussion.

W.W. Rostow

Moscow, May 25, 1959