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MANPOWER RESOURCES OF IMPORTANT WORLD POWERS

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MR. POLUHOFF: General Holman and members of the Industrial College: In our study of manpower and economic mobilization it is necessary that we make an inventory and evaluation not only of our own country, but of other areas, and not only of our friends, but of our possible foes. Consequently, this subject is of great interest not only to the students working on this problem, but, we feel, to the entire college.

Our speaker today on "Manpower Resources of Important World Powers" is a professor of population studies at American University. He has been engaged in research on population and manpower in Japan, and is the Director of the International Population Union. He is also the author of a book with which you are familiar--"The Population of the Soviet Union." He has contributed articles to pamphlets and magazines, which you are all presently studying. I now introduce Dr. Frank Lorimer.

DR. LORIMER: Our assigned topic, "Manpower Resources of Important World Powers," is a rather broad one. I am afraid we are likely to find ourselves circling about in space, and it may be somewhat difficult to get any specific bearings. However, most of you are working on very specific and precise tasks, and it may at least provide some relaxation or a weird kind of recreation to make this bird's-eye view of the world in the course of an hour.

Let us begin with a broad sweep, about as broad as possible. Let's say there are 2 billion 330 million people in the world. This is the figure recently put out by the United Nations Population Division, with reference to midyear 1947. It is a rather artificial figure, largely built up from official national estimates, some of which are pretty dubious; but it will serve our purposes.

Now, just exactly one-fourth of all the world's people, 582.5 million, are located in Europe and the Russian plain. This figure includes parts of the Soviet Union proper east of the Urals, Siberia, Kazakstan, and the central Asian republics. The Urals have, in effect, withered. The conventional distinction between European Russia and Asiatic Russia no longer has any functional significance. So we will simply think of Europe and the Russian plain as a continuous natural area.

The population of this natural area is, as we all know, now pretty clearly and decisively cut into two political groups by their political affiliations and economic operations, by the line between the nations

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participating in the OEEC (Marshall Plan) program and those embraced in the Soviet bloc. Germany is clearly cut in two, except that Berlin cannot be clearly allocated to either side. Since Austria has a central government and participates in the OEEC program, but is partly occupied by Soviet troops, we will also leave it out as a somewhat dubious zone. The political alignment of Finland and that of Yugoslavia are also ambiguous, for different reasons. Finally, Spain appears to be in the status of an appendage to western Europe, is not included in the OEEC program, certainly is not a part of the Soviet bloc, and in any case as regards economic production is not very important. So we will leave its population out of account. Eliminating these ambiguous areas from our 582.5 million, there remain 520 million people in Europe and the Russian plains, divided into two political spheres.

The western bloc of cooperating European nations has, let us say, the following composition: There are the western and northern European nations, with high productivity--together they have 131 million people. That is a little less than the population of the United States. Let me say that, in order to keep the figures comparable, we are using the 1947 figures. Western Germany has 46 million. Southern Europe (Portugal, Italy, Greece, and the Mediterranean islands) has 62 million. That give us 239 million, or, say, 240 million, in the cooperating democratic bloc in western Europe.

The Soviet Union is apparently estimated, as of 1947, in the UN tabulation as having 195 million inhabitants. This is a concealed figure for administrative reasons; and in any case it is only a guess. We will come back to that a little later on. But for the time being we will use that figure as presented in this UN series--195 million for the Soviet Union. The European satellites of the Soviet Union, excluding Yugoslavi had 70 million inhabitants; and the Soviet zone of Germany, excluding Berlin, 17 million. This gives a total of 282 million in the Soviet bloc, as contrasted with 240 million in the democratic bloc. The ratio of the Soviet bloc, then, is nearly 118 to 100 in population.

Fortunately, western Europe is not isolated today, but is part of the larger Atlantic community. The United States, Canada, Australia, and New Zealand had a combined population of 166 million in 1947. (It is 10 million higher now, but we are keeping the 1947 figures for purposes of comparability.) The association of these highly productive New World powers with the cooperating European nations gives a combined total population of 405 million in what we might call the North Atlantic community, using that term with enough elasticity to include Australia and New Zealand. The nations of Latin America, though handicapped in many cases by low productivity, and in some cases by political instability are also an important part of the larger Atlantic community. Adding in their population brings the total of the Atlantic community nations to 558 million, which, as you see, is in gross population almost twice that of the European Soviet bloc.

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We obtain a similar result if we compare the Communist and non-Communist areas in Asia and Africa, the Oriental-African world. In this case we omit Korea, Formosa, and Indo-China, with a combined population of 61 million, as areas of immediate conflict. The population of the Asiatic Soviet bloc, Mongolia and China except Formosa, is given as 459 million. This is an arbitrary figure which is probably much too high, but we will let it stand. India, Pakistan, Nepal, Ceylon, and the other small Indian states together have about the same size, that is, 426 million in South Asia. Adding 79 million for Japan and Okinawa, 74 million for Near Eastern countries including Turkey, and 142 million for Southeast Asia (except Indo-China), and the Pacific Islands, except Australia and New Zealand, the total comes to 721 million Asiatics outside Communist control. Adding the population of Africa brings the total up to 912 million people in the Asiatic-African non-Communist world, which, again we see, is double the size of the Communist world. Thus in both the Occidental world and in the Oriental-African world the ratio of the gross population in the non-Communist bloc relative to the Communist bloc is two to one.

The discussion up to this point has been on the very superficial level of gross population figures. As background for indicating the relation of age distribution to demographic and economic trends, I have brought along two large charts (which I filched from Dr. Kirk). (The charts were not reproduced.) The age pyramid for India is fairly typical of all Asia, Africa, and the Caribbean area. It is the characteristic type of population in that area--with high fertility and high mortality, so that as cohorts advance from birth to successive ages, their numbers are decimated. That type of structure is very greatly exaggerated by rapid population growth if maintained continuously.

Something of the same age structure, but in somewhat less extreme character, is represented in the age structure of the Soviet Union, which has been traditionally an area of high fertility and high mortality. However, it differs in three respects. In the first place, there are deep gashes at various points, due chiefly to birth deficits in the periods of calamity, in the periods of the first war and the revolution, in the collectivization program, and then finally in the period of World War II. It also has a relative depletion of males, due to war losses and losses associated with the process of forced collectivization and revolution. It would also, however, have a less broad base because of the reduction in births during the period of the operation of abortion clinics and the rapid industrialization. There was a sharp depletion or drop in Soviet births. I have estimated that, as of 1940, at the beginning of World War II, there were 13 million fewer children under 15 years of age in the Soviet Union than there would have been if the birth rate had remained at the 1926 level. That was quite an aid to the Soviets in their war economy, because, although it means a somewhat slower population growth in the future, it cut off a lot of temporarily

useless babies that would have had to be fed, thus aiding industrialization and military power. However, you still have something of that character as the broad outline of the Soviet population--a high proportion of children and a small proportion of aged persons.

The pattern of the United Kingdom, of course, stands in sharp contrast. This is roughly typical of the situation in all western Europe, where they have had for a long time a relatively low mortality and a constantly declining death rate, and where the population has been affected over a period of 70 or 80 years by decreases in birth rates. So that up until the time of the recent baby boom, which accounts for the broad base, you had smaller numbers in the young cohorts coming in, whereas the older groups were the survivors of the group born when there was higher fertility.

I think this is worth a little bit of extra comment. Because of this situation, in the United Kingdom during the next two years there will be a decrease in the whole range of ages from 20 to 44. And this is sufficiently marked so that in the whole labor force age range there will be a net decline in the potential economic manpower in England during the coming 10 years. It will not be sharp, but some decline in manpower is already setting in. That will later be corrected as the baby boom produces young adults. In France that process has already taken place. There were fewer people in 1948 in the age class of 20 to 44 than there had been 10 years earlier, in 1939. The situation in the United States and Australia is somewhat analogous, but less extreme.

These radically different population patterns are, of course, very important in thinking about military and economic manpower. The Indian is the oriental pattern. The United Kingdom is the present western European pattern. Something of that Indian structure tends to characterize the eastern European, the southern European, and the South American countries.

Since we have as our topic the whole world, I am going to say just a few words about demographic conditions in Asia, but only a few words, before passing on.

The manpower concept has little or no applicability in thinking about Asia. Manpower is not a useful concept, because as potential manpower is applied in the actual generation of economic power, this tends to be short-circuited into lower mortality, accelerated population growth, and a rise in consumer needs, with no net increase in productivity. This creates a vicious circle of perpetuating poverty, high fertility, and high mortality. Only two greatly impoverished agrarian nations have broken out of this vicious circle in the last 50 years--Russia and Japan. Therefore it is very interesting to study the process of Russia and Japa

as they move from the vicious circle of self-generating poverty toward industrial and technological power.

I will comment only on three general conditions. Let me state briefly what seem to be three general conditions in the advance of an impoverished nation toward economic power.

First, there must be the formation of an elite corps of competent administrators, skilled workers, technicians, and instructors. That may come about in various ways, but that is certainly one condition. There must be formed in some way a nucleus, a corps, of technically competent people. Second, there must be extensive mass processes or mass education so as to increase the productivity in the agricultural villages, which are the main segment of the economy. And, as a third condition affecting that process, there must be some strong centralized government which maintains intelligent order and has the power of tightening belts, so as to effect a diversion of surplus production from immediate satisfaction of consumer needs into the formation of industrial capital equipment. You can see that all those conditions were rather neatly fulfilled by the Soviet Union and by Japan.

These processes in addition must and will eventually lead to the reduction of excessive births. There is, I believe, some real prospect that the two largest nations in Asia--namely, India and China--may move in this direction during the next half century, for somewhat different reasons and along different political lines. But in any case this is a very complicated question, and it can have no significant effect in the immediate decades ahead on the balance of economic and political power in the world.

I will make simply one other reference to Asia, namely, with reference to Japan. I will call your attention to the fact that outside the Soviet bloc, Japan with some 32 million labor force represents the one present competent, highly productive labor force of the Orient. The objective integration of the operation of that labor force into our total program is a very important part of strategic planning.

We will turn now to questions relating to the Soviet Union. Let me speak first very briefly about our knowledge of postwar population trends in the Soviet Union. The answer is that we haven't any, with the exception of information on the employed labor force in industry and administration. This information is fairly definite and can be derived from election data, on the trends and relative distribution of the Soviet population, which also is quite specific, although it has some holes and bugs in it. We have no reliable direct or indirect information on the population of the Soviet Union since 1939. We can therefore only proceed on the basis of inference from prewar trends, guesses--I would underline that word "guesses"--about war losses, and

dubious inferences from miscellaneous information. We may as well accept this as a fact.

Some authors have produced quite specific estimates of the present Soviet population. In most cases they have based their work quite extensively on a noncritical utilization of materials that are presented in my text such as the detailed age structure of the Soviet Union in 1939, without full awareness, as I am aware, having worked up the material, of the bugs in those data, with very large margins of error. I have in mind attempts to use these materials to give very specific difference between specific age blocs, assuming a degree of accuracy in estimates that is unwarranted. One should be warned against the uncritical adoption of elaborate inferences on the basis of shaky data.

This whole topic of present trends in the Soviet population is discussed in a forthcoming article by John V. Grauman and myself in a symposium on "The Russian Economy," edited by Seymour Harris, of Harvard University. We present evidence to support the thesis that the Soviet Government is developing a potentially excellent system of demographic information through the use of population registers, but the results obtained in this way remain for the most part guarded secrets. After reviewing all direct and indirect evidence known to us, we estimate that in 1950 the total population of the Soviet Union lies between two figures, indicated by different lines of analysis, somewhere between 187 million and 201 million people. That is a gap of 14 million. The correct amount is probably less than the upper figure, but it is perhaps nearer the upper than the lower figure. Any alleged exact estimate should, we believe, be treated with great skepticism.

Estimates of persons 18 years of age and over in the USSR in 1950 have a somewhat narrower range. We know a little more about the number of adults than we know about the total. Probably the number of those 18 and over would range between 116 million and 125 million. This adult population is heavily weighted with young adults, but among those 20 to 45 years of age there can be about only 85 men per 100 women. The Soviet Union is heavily weighted with young women, but also with young men relative to older men. I have a chart (not reproduced) which in general represents the trends in Soviet population of prime military ages compared with the trend of the United States population of prime military ages, taken as 18 through 25, inclusive, a 7-year group. It may seem to you, in virtue of what I have said about the uncertainty of our knowledge about Soviet population, to be somewhat hazardous for me to present such a chart. That would be so certainly as regards the absolute values. For that reason I think I should tell you that the absolute values, the absolute figures, are "classified information" which I am not at liberty to disclose. But the general shape of the trend I present with considerably more certainty. We can observe something of the shape of the trend without knowing exactly what the values are.

The lower line, taken from a recent bulletin of the Metropolitan Life Insurance Company, is the corresponding trend for the United States in males 18 through 25. The chart runs from 1940 through 1965. I should say that these lines for the USSR would turn up after 1965. The drop represents simply the effect of the deficit in births during the war in the Soviet Union. The exact amount of that is unknown and therefore two lines are shown, one my hypothetical figure of a deficit of 6 million births, and the larger hypothetical deficit on the assumption of Timasheff. So I charted those two. There would then be a turnup if we went farther beyond the chart, assuming a baby boom in the Soviet Union as in all other countries in the immediate postwar period. This doesn't indicate a long-time dip.

The young males rise rapidly in the period from 1940 up to about 1949, up to about the present time. By the way, the peak represents the present situation.

I had better make one or two other technical comments. The chart was based primarily on estimates of births or on census age distribution when they were available. It was originally calculated for the population within the 1939 boundaries of the Soviet Union and then arbitrarily increased throughout the entire range by 11.5 percent to somewhat approximate the situation of the total USSR. The trend in the annexed areas may not have followed quite the same pattern. Also the chart does have some adjustment, but perhaps not an adequate adjustment, for the estimated effect of the excess war deaths.

Coming back to the interpretation of the chart, at about the time of the German onslaught on Russia, the young people in this age were the product of children born during the early revolutionary period and World War I births. Therefore the cohort was small. During the period of World War II there was a rapid maturing of young men, which was, of course, a source of increasing strength and power of resistance for the Soviet Union in its military operations during the Second World War. That trend has continued till you have the cohort now at these primary military ages that represent those born in the middle and late twenties, when births were at a peak for the Soviet Union.

The next dip occurs as you move into the group of young men who were born during the period of the forced collectivization, the period of the first Five-Year Plan, which was a period of hardship and was also the time when the abortion clinics were in full swing, and there was a great depletion of births at that period. Then there is a rise as you move toward 1960, as you come into the births of the late prewar period, when in the late thirties there was a recovery in the birth rate, although it never went up to the earlier level.

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Although I said I wanted to be very chary about any absolute figures I will state that the ratio of the Soviet figure at the present time to the United States prime military manpower, which was obtained by the mechanics that I went through, gives a ratio of 185 to 100. I wouldn't take that too seriously, but I think one could be pretty sure that the Soviet Union would have an excess of young men of at least 75 percent or more above the number of young men of the same ages, 18 through 25, in the United States.

In general you see a population structure of something of this character (indicating India chart), particularly if it isn't quite so broad at the base. The inference is very favorable to a proportion of young men of military age. It becomes much less favorable when you are thinking about total economic manpower, and that is the general contrast in the situation between the Soviet bloc and the western bloc.

For this reason the number of young men aged 18 through 25 in the combined population of the European nations plus the United States, Canada, Australia, and New Zealand cannot be much in excess of the number of such young men in the Soviet bloc. This group of nations I call rather arbitrarily the North Atlantic Community--the high productivity core of our effective alliance. I obtained a horseback estimate that the total of the young men of prime military ages in the North Atlantic Community, so defined, might be about 10 percent above those of such ages in the Soviet bloc. But one would want to study that more carefully before taking such a figure seriously; and, even so, there would still be quite a large margin of error.

However, the situation is quite different as regards persons in the whole labor force age block. The North Atlantic Community has a 40 percent excess in total population, and probably a slightly higher ratio in terms of total persons in the productive ages. It depends a little on just how you define that for comparison, whether you take 15 to 60 or 20 to 55 or some other group. But on a reasonable estimate I would suspect that we would come out with perhaps an advantage of something like 50 percent in the economic manpower of the North Atlantic Community, in contrast with the very slight advantage of only perhaps 10 percent in the prime military manpower. It seems to me that this distinction of the relative advantage in economic manpower of the Atlantic Community in contrast to the difference in military prime age manpower is one that might have considerable importance in strategic planning.

The economic advantages of the North Atlantic Community are far greater than indicated by a mere demographic comparison which indicates a 50 percent advantage. In the first place, less than 20 percent of the employed labor force of the North Atlantic Community is absorbed in agricultural production, thus releasing some 80 percent for industry, administration, and other occupations. On the other hand, as late as

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1940 over 50 percent of the effective labor force of the Soviet Union was still absorbed in agricultural production and an even higher proportion in the eastern satellite countries, or at least in the areas absorbed later into the Soviet Union. So the USSR has a smaller number of adults, because it has fewer of the adults of mature ages; and a larger proportion of its manpower is still absorbed in agricultural production.

It is true that economic planning in the USSR has achieved a rapid transfer of manpower from agriculture to industry and administration. The number of workers and employees outside the collective farms and the small cooperatives grew from 11 million in 1926 to 30 million in 1940, thus rising from 7 percent of the total population of all ages at the beginning of that period to 17 percent of the total population of all ages (actually 17.5 percent) in 1940.

The disruption of war and the absorption of the agrarian population of the annexed areas reduced this ratio. It has then risen rapidly in the last two or three years, so that as of the end of 1949 there are apparently about 35 million workers and employees in the Soviet Union. I take that figure from a recent Bureau of Labor Statistics note on labor abroad, but it checks with other work that I have done.

If we assume a total population of 195 million, the workers and employees now represent 18 percent, which is just about the same as in 1940, or slightly better. We may therefore conclude that something like 50 percent of the effective labor force of the USSR is still being absorbed in agriculture and related occupations or in other occupations outside industrial production and administration. That is in contrast to some 20 percent, perhaps, as an over-all average, for the North Atlantic Community.

Therefore the North Atlantic Community has something like 240 potential industrial and administrative workers for every 100 such persons in the Soviet bloc. Then, of course, in addition to the greater potential industrial manpower of the North Atlantic Community, the North Atlantic Community obviously has a higher productivity. But that is a subject which I am not prepared to discuss.

I will just make one or two concluding remarks. If real cooperation in meeting the economic and social problems of mankind is ever established between the people of the Soviet Union and those of the Atlantic Community without an intervening cataclysm of war, the prospects of human progress would indeed be bright, with the progressive trends in both the Soviet bloc and the North Atlantic bloc. This, I assume, is still the ultimate goal of our national policy; but it no longer appears as an assured prospect. Our first and immediate step in the achievement of this ultimate goal of world cooperation coincides, therefore, with the more immediate goal of self-preservation.

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The first step toward both the ultimate goal and the immediate goal of self-preservation is, of course, the construction of a military power of such magnitude in the democratic world as to make the prospect of launching a war unattractive to the Kremlin. We are somewhat late in full realization of this responsibility, but it is clear that we possess the human as well as the material resources for this task if they are effectively organized.

It is also clear that this is necessarily a cooperative undertaking among the democratic nations of the world. It, therefore, involves the very delicate integration of diverse national interests between nations with different traditions, peculiar institutions, and local problems. It is not a thing which in order to be effective we can just forge ahead with. The progress achieved during the last few years toward the integration through the United Nations and outside the United Nations chamber toward the integration and unification of the democratic world for the defense of its security seems to have been quite stupendous. The progress thus achieved under the leadership of our Department of State runs far beyond anything that I would have considered possible, and, I suspect, beyond anything that many of you would have considered possible three years ago. It is a very brilliant achievement in American diplomacy, and it may save us. It is a process which is just midway.

Now, the translation of the potential human resources into actual economic and military power involves very many complicated problems. These vary from region to region and from time to time, depending on total numbers, age and sex composition, institutions, natural resources, technology, and capital equipment. I am not competent to deal with many of these special and regional problems, such as the special problems of the European manpower organization. Even if I were, there is obviously no time to do so in this course. I would, however, be willing to enter into any particular questions, but anyone who wishes to ask specific questions about particular regions or more specific aspects of this problem should feel at liberty to do so and I will decide whether or not I will attempt to deal with them.

I have not dealt at all really seriously with the population problem in Asia. I have refrained from saying anything about the particular problems of the Kazak population, the largest non-Slavic minority in the Soviet Union, which occupies a very strategic position, although a group of my students have been making a special study of this fascinating area during the past year. I have not dealt with important aspects of population change in western Europe as they affect or bear on the effective utilization of manpower--such problems as those emerging from the increasing proportion of aged persons, or the problems of migration and abnormal age structures. In short, I have left unsaid much more than I have said but at this point I stop.

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QUESTION: What is the reason for that notch in the chart of India on the male side, about the 15 to 20 age group? We know that India was not at war at that time, and I wonder why there was that sudden decrease in population in that period in 15 to 20 before that chart was made up.

DR. LORIMER: Dudley, could you do that? I stole that chart from you.

DR. DUDLEY KIRK, State Department: I think that notch is probably not a true notch in the Indian population. I think that in part perhaps it is a true notch. There are two things, I think, that contributed to it. One is the fact that people at that age group are not believed to be very well reported in the Indian census. That is partly because they are a group that is most mobile in the Indian population.

Another factor that has been suggested for that was the effect of the First World War on the Indian population. But I don't think that could have been of very great significance, because these are people who were born in the period of the First World War. I don't think this could be a very large contributing factor, because not a very large proportion of the Indian men were mobilized, and hence you couldn't expect a very large loss of births from that factor. I don't think it is anything of any significance.

DR. LORIMER: India is one of the few countries where the mortality is a little bit higher for females than it is for males. Mostly, you know, males die more easily, they are more delicate, than females. But in India life isn't very good for the girls or ladies and they die pretty fast. But that may be due just to a change in the method of reporting them.

QUESTION: Looking at those two charts, Doctor, the scales seem to be the same. As I understand it, the population of the United Kingdom is approximately 40 million.

DR. LORIMER: These are percentage charts. They are just proportions, not absolute numbers. Does that meet your problem?

QUESTION: Maybe I had better try it anyhow. I can't convert my question that quickly. The point is that the slope of those two curves appears to be approximately the same except that the Indian is the reverse of the United Kingdom. If the English had continued at the rate that they show down to the ages of 35 to 40, they would have a terrific population on the islands now. I think England's population is around 40 million now. It would probably be approximately 70 or 80 million or a higher number if it hadn't been for the wars, and they really would be in a cramp, it seems to me.

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DR. LORIMER: That is quite true. The effect of the decline of fertility is complicated. Let me make just three observations in the light of your remarks.

In the first place, wars have reduced the total population, which would otherwise be too many for the island to support. In that connection you must realize that an addition of, let us say, 10 percent to the British population means an addition--my figures aren't right, but the idea is correct--of 20 percent in the amount of food that has to be produced. The English can produce enough food, let us say, to feed a certain number of people. If you double the number of excess people, you double the amount of food that has to be imported beyond that which they can raise. The decline in fertility was not for this purpose, but it was in the national interest. They would be in a situation more like south Italy, a very bad situation, if they hadn't had the decline in fertility.

In the second place, the decline in fertility had a contrary effect giving them a high proportion in the working ages. It increased the ratio of labor force to consumers. But, as this goes on, it brings a new problem. As large numbers move up into the old ages, you get a problem of a population overbalanced with aged persons.

France is the country that feels that most severely. At the same time, the French and the British feel that they must not allow population decline to continue further; and they are interested in putting a quite large amount of money into aiding parents in bringing up their children. The French are doing that more in terms of money than the British. The French, therefore, have to support a lot of old people who are drawing pensions and otherwise living off the rest of the community. At the same time they give support to children in very large measure. It is real money that the French are spending in aiding the development of babies. This is putting two strains on the economy, which really hamper the French in military effort or in productive recovery. There are other things that hamper the French in productive recovery; nevertheless, I mention that as one of the points illustrating the many specific problems that different countries face. It is very easy for us to become impatient with the French and think perhaps that they should make a larger and more effective, let us say, military effort.

Now, in view of the hazardous situation that they are in, there must be a very sympathetic and delicate understanding of the problems faced, which arise in part from the advancing age structure of the French population. I rather want to emphasize the importance of a sense of delicacy and sympathy with the variant interests of other nations with whom we must cooperate.

You are quite right--that England would be worse off without the decline in births. It does, however, bring some problems in the long run in terms of the growth of a disproportionate number of aged persons.

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QUESTION: Doctor, you have given us a good quantitative analysis of these population trends, but you indicated also that it is necessary to review them qualitatively from time to time. I think a true picture of the manpower of the United States versus that of other countries would have to have that qualitative factor put in. Is there any way known to a demographer whereby you can do that and give us a true picture of the two sides other than just figures?

DR. LORIMER: No. I think that gets to be a point where we say, "This is where the strictly demographic analysis stops" and it stops, leaving very important matters out of consideration.

I carried it as far as I could. First, I talked about total numbers. Second, I talked about differences in age structure. Third, I talked about occupation distribution, which was a fairly clear thing to pick up. So I showed that the Western World had increasing advantages as you moved from total population to labor force and still more as you moved toward the consideration of the number available for industrial and administrative work. Finally, I said the differences in productivity are very great; but I think that in terms of differences in productivity we have to pass the problem over to specialists in a different field.

We are interested in interrelations between population and economic and social processes. But you get to a point where you move into the qualitative realm, where, as you go in for refined analysis, you move out of the field of demography into that of other sciences.

QUESTION: I understood you to say that Japan and Soviet Russia had licked the problem of the cycle of famine and higher birth rates. Can you amplify that a little bit more and tell whether the same formula would apply to India?

DR. LORIMER: I did not say that Japan had yet licked the problem of higher birth rates. I said that it had licked the vicious circle. It did this, however, up to this point, not by cutting down on fertility. The Japanese age structure still looks a lot like India's. It is not quite so steep, because they have better mortality. But they have a very high proportion of children.

The Japanese did it by virtue of the fact that they started in the modern period with a disciplined and quite literate population. Even before they had contact with the West, the Japanese population was a more literate population than any other population in the Orient. I don't quite know why that was, but it was true. It was also a quite highly disciplined population. Then, as they picked up Oriental skills, they were in a position where, having the jump on the rest of Asia, they were able to exploit the resources not of Japan only but the resources of Manchuria, North China, the South Pacific Islands, Formosa, and Korea.

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There has been for years some trend toward declining fertility. For a time that didn't proceed much more rapidly than the decline in mortality. Within the last year or two, there have been some rather spectacular drops in Japanese fertility. The Japanese Government, with some hesitation on the whole, has tended to adopt a governmental position that it wishes to reduce excess births, and has introduced legal sanctions to the giving of contraceptive information through public health centers. It may very well happen that the literate and disciplined population of Japan will move toward a very rapid decline in fertility during the next decade or two. It has not yet happened, but it is not impossible that it will happen.

The advance was due to the skill of the people and Japan's peculiar situation with reference to the resources of Asia. It made the jump. I think it was Dr. Ezekiel who once used the figure of speech that getting out of poverty is something like getting an airplane off the ground. You go along for a while; and, as you go ahead, let us say, the increased production is absorbed with increased population. As you get up a certain momentum, then you get off in the air. Production commences to exceed the increase in population, and then you move ahead. But you have to get, so to speak, into the air. You have to get up a certain momentum, so in the process the timing is very important.

In the Soviet Union it was effected without the use of outside resources. It started with a somewhat lower density, but that was an area of great undeveloped natural resources. Take one of the great coal mines in the Soviet Union in the middle of the Kazakstan Desert. Magnitogorsk 30 years ago was a place where nomads were wandering across. Now it is one of the great industrial areas. The Soviet Union had the advantage of great undeveloped natural resources.

It also maintained an iron grip on consumption. It had very effective devices for keeping the belts of its people tightened. So as it got surplus production, it plowed that back into capital equipment. In that sense Russia is the most capitalistic nation in the world. It has most rapidly advanced its capital formation relative to its total level of production.

It had a core of workers from the old empire that were very skilled. It had some very skilled and literate people and administrators to come in. But the process is a very complicated one. I made the statement that I thought one could view the situation in the great countries of Asia without absolute skepticism. But it is a very complicated process and it involves this matter of capital formation and mass education, the formation of a core of technical workers, for different reasons.

India has the luck of having quite a little capital on hand that it got from the British and which was, so to speak, impounded during

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the war and is available to some extent. It has had enough progress so there is now quite a little technical and intellectual elite in that country. India still has mass poverty, but it has cadres, corps, of technically competent people, and a pretty coherent national government at the present time. It is pretty strong. And that is presumed on a more or less laissez faire economy with some government control. It is making some advance.

The Chinese will undoubtedly learn a great deal from the Soviet process in effecting this. I will tell just one brief story to illustrate that. I was talking eight years ago or so with a Chinese industrialist who was interested in studies of productivity, and I asked him, "Have you studied the Russian processes? Have you been interested in productivity?" "Oh, yes," he said, "and we learned a great deal." This was a factory owner. He said, "One of the things we got from the Russians was a technique of getting men to go in gangs and teaching them how to swing a hammer."

That made a great impression on me, because they were doing a mass education process in technology at a level that we don't think about. But the Russians developed some of the tricks of turning peasants into factory operatives; and undoubtedly some of the processes that the Russians used in this advance, and probably some of the controls, will be applied by the Chinese. However, the question really is too complex to deal with.

MR. POLUHOFF: Dr. Lorimer, on behalf of the Industrial College I thank you for this interesting discussion of a difficult subject. We appreciate the sacrifice of time and the effort put forth by you. Thank you, Dr. Lorimer.

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