

THE GEOGRAPHIC FOUNDATIONS OF NATIONAL POWER

15 November 1961

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NOTICE

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INDUSTRIAL COLLEGE OF THE ARMED FORCES

Washington, D. C.

Dr. Preston Everett James, Professor of Geography and Chairman of the Department of Geography, Syracuse University, was born on 14 February 1899 in Brookline, Massachusetts. He received his A. B. degree in 1920 and M. A. degree in 1921 from Harvard University. From 1921-23 Dr. James was an instructor in geography at Clark University and received his Ph. D. degree from that University in 1923. He then joined the University of Michigan as an instructor and advanced to the position of professor by 1934 in which capacity he served until 1945; from 1945 to the present date Dr. James has been professor of geography at Syracuse and has been chairman of the department of geography since 1951. During World War II Dr. James served as an officer in the U. S. Army, OSS, as Chief, Latin American Division (1941-43), and Chief, Europe-Africa Division (1943-45). From 1951-57 he held a commission as colonel, U. S. Army Reserve. In 1957 he was Fulbright Professor at the University of Edinburgh, Scotland. Dr. James was a member of the Joint Committee on Latin American Studies (American Council of Learned Societies, Social Science Research Council, National Research Council) from 1939-44. He was the U. S. Member of the Commission on Geography, Pan American Institute of Geography and History from 1949-57. In 1949 he was appointed Chief, U. S. Delegation, First Consultation in Geography, which met in Rio de Janeiro and subsequent meetings in Washington, D. C., 1952; Mexico City, 1954 and Rio de Janeiro in 1956. He was also a member of the U. S. delegation to the 18th International Geographical Congress in Rio de Janeiro, 1956. Dr. James is a member of numerous geographic societies. He is the author of "An Outline of Geography" (1935); "Latin America" (1942); "A Geography of Man" (1949), and a series of grade school geographies (with Gertrude Whipple) (1947-55). He is the editor of "American Geography, Inventory and Prospect" (with C. F. Jones) (1954), and "New Viewpoints in Geography" (1959). He is also a contributor to various current magazines. This is his first lecture at the Industrial College.

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COLONEL SMITH: Our studies for the past few weeks have given us an appreciation of the human and material resources of the world. A kind of central theme running through all of this has been the various geographical factors. It has become quite apparent that these factors, such as location, size, shape, topography, climate, and natural resources have a decided influence on the determination of national power.

Our speaker this morning, Dr. Preston E. James, Chairman of the Department of Geography, Syracuse University, is an internationally recognized authority in the field of geography. In fact, he just came back from a piece of terrain in Eurasia known as the Soviet Union, or rather he was there this fall.

He will speak to us on the subject of "The Geographic Foundations of National Power."

Dr. James, it is a pleasure to welcome you to the Industrial College.

DR. JAMES: I assure you that, after having been in the Soviet Union for one month, I'm not going to make a speech about it. I think that if I were John Gunther I might have done it in three weeks, but it seems to me that after a month you get over some of the initial ideas and then you don't have any good ones to follow up with.

I am not going to talk to you specifically about the analysis of national power, of any particular national power, but I would like, in the time available here, to make some remarks about the general concepts which would guide you in making an application of modern geographic ideas to the analysis of national power. These general concepts I am going to support with one or two little maps which I will put on the screen in a little while here.

I believe we are to have about a half-hour of discussion and question period, so, if there is something that you would like to disagree

with or would like to argue about or ask questions about or have me amplify, just keep it in mind and we will discuss it later on.

Of course one of the most important things you need to know about a country if you are going to judge its power has to do with the resource endowment. What is this resource endowment? What is a natural resource? What is the process by which a natural resource becomes important?

Modern geography insists on the principle that the significance to man of the physical features of the earth is a function of the attitudes, objectives, and technical skills of man himself--that is, the culture. The anthropologists use the term "culture" to mean a way of living. You must understand that the thing that makes a natural resource a resource is human technology. This is perfectly obvious when you think about it, and yet a lot of people draw conclusions about the capacity, the potential economic capacity, of a state on the basis of its resources, forgetting that technology makes all the difference.

Take for example the case of coal. Most people would list coal as a natural resource. Yet the fact is that coal has only been a natural resource which has resulted in the localization of people and industry for just about 100 years. It was in 1858 that the Thomas Gilchrist process was developed by which bituminous coal could be used in a large-scale operation to make coke. After 1858 coke, made from bituminous coal was used in the steel production. They had made steel out of anthracite coal and had succeeded in using some coke many decades earlier, but not on a large scale. The large-scale process was developed in 1858. This was just about 100 years ago. It was at that point that bituminous coal became an important resource on which industry would localize. Before that coal was just something that was black rock.

In 1804 there were some enterprising boys who went up the Susquehanna River and dug out some bituminous coal. They brought it down the river and dumped it on the banks of the river at Columbia, in Lancaster County, and tried to sell it. Nobody would buy it. It wasn't a resource in those days. That was 1804 and nobody would buy the stuff. They didn't know what to do with it. Houses were heated with wood.

Well there was a fellow by the name of Judge Jesse Fell in Wilkes-Barre. Judge Fell said, "Well, let's use this stuff. First of all we'll have to make a special grate." So he had a blacksmith make a special

grate for him. He demonstrated that anthracite coal was better for heating a house than was our open wood fireplace. The result was that people began to buy the coal. This is only just a little while ago as human history runs. Before that coal was not a localizing resource.

Until about 1860 the Ruhr, in Germany, was just poor grazing land, poor pasture land. It wasn't even good for agriculture. It was poor, sandy pasture land, and there was no industry there. Coal was mined in the Ruhr but it could not be sold more than 20 miles away from the mines because of the cost of transportation.

These changes have happened so recently that sometimes you forget that coal has only just now become a resource, and maybe it is not going to be a resource for very long. Already coal is not a major localizing factor in the steel business, because the technology for manufacturing steel in 1860 was such that it took two tons of coal to one ton of iron ore to make steel. Naturally, when you have two tons of coal and one ton of iron ore, the result is that you localize your industry on the coal and bring the iron to it.

This has been the story of 19th century Europe, where Germany had the coal and France the iron ore. Because of this technological situation of two tons of coal and one ton of iron, the big industry developed in Germany. France had the iron ore and could send it to Germany. Then they would get some coal back. Then they would have an industry which theoretically at least would be half as big in France as was the German industry. That was 1860 and all through the latter part of the 19th century.

By the end of World War I and between World War I and World War II there came a number of very important changes in technology of the steel business. Part of this was done by the Indians. The Indian engineers at the great Tata Steel Works in Jamshedpur developed a method for using high-grade iron ore and using a much smaller proportion of coal. They used a low-grade coal. This method resulted in almost reversing the ratio, so that it took more iron ore and it didn't take so much coal to smelt the iron ore as previously. The result was that the industry was at that moment freed from attachment to coal.

But at the same time something else was happening. That was that it became much less costly to ship both coal and iron to a steel industry located right near the market. It became obvious that if steel was running out of a steel factory and was still hot it could be manufactured into steel objects while it was still hot without the necessity of reheating it.

It was cheaper to make things from steel right on the end of the steel factory. In other words, if you could put the steel industry right next to the market for steel you had the best setup.

This is what has been happening in the United States ever since World War I. New steel plants were market oriented rather than raw-material oriented. The change was a change in technology. In other words, you have to reevaluate the meaning of resources every time you have a change in technology.

I could go on almost indefinitely talking about this with examples. It just occurs to me that vanadium is an example. I was in Peru at the time when this vanadium became tremendously important. This is the major source of vanadium in the world, right back of Lima in Peru. It was at a time when somebody in Detroit figured out that you could make automobile axles that wouldn't break if you mixed the steel with vanadium. This was before your time, surely, but I can remember when every time you went out in an automobile on a long trip you always broke an axle. One of the things you did was stop at a local blacksmith shop and have the thing fixed. Nobody thinks of breaking axles anymore.

For a while vanadium was the answer. When they wanted vanadium, Peru was the one great source. There were workers brought together, capital invested, railroads built to carry the vanadium from Minas Ragra to Callao.

Then overnight somebody found a better way to make steel that wouldn't break, so that the market for vanadium, which had been wholly tied up in this one project, just disappeared overnight. Think what happened in Peru at this moment. Not only did the government lose revenue but a lot of Indian workers lost food. They didn't have anything to eat, because nobody was paying them anything. The place was practically abandoned.

Whereupon somebody found a new way to use vanadium--a change in technology again--so the vanadium business has picked up. So it goes.

Of course, there are the old minerals which have always been important, like copper and tin, and iron. But think of the new minerals which are of absolutely vital importance today. These have been important really for only a few decades. Of course bauxite for the manufacture of aluminum is vital. Tin has become much more important than it was when it was simply mixed with copper to make bronze.

Tin has a new significance. There's uranium. Well, you can go down the list. Each one of them has a sort of temporary significance. You cannot claim that this thing is a permanent resource or a permanent endowment. You've got to analyze the significance of that mineral with respect to the technology.

Another point here that results from the technology and the industrial revolution is the tremendous volume of metals required to supply modern industry. You can't take minerals from low-grade sources or sources where the ore is not in abundance. In order to set up a large-scale low-cost industry, you have to have a huge volume of ore. It doesn't have to be rich ore, but it does have to be in huge volumes. The result is that there are not many places in the world where huge volumes of ore are to be found. You can go down the list of minerals one after the other and you will find that something like 50 to 60 percent of the production of that mineral will come from two or three places in the world. This tremendous concentration of production is a fact of economic geography which has existed in the world for only about a century. Before this, you could take any little ore body and develop it.

In the United States, for example, in the iron forges they made iron from just the smallest little deposits of iron. These things were scattered all over the eastern part of the United States. In New England they used to make iron from bog iron ore out of the bottoms of the lakes in New England. The bacteria deposit bog iron ore, a very low-grade limonite, and this stuff was good enough to support an iron forge, using charcoal, and sea shells for the limestone.

Modern industry is now such that there is not any use going out and taking bog iron ore. It is too expensive to try to look for that type of ore body.

Let us turn to another thing here, the significance of barriers. This also has something to do with national power. What kind of barriers has a country got? Can you talk about natural boundaries to a country? You know France developed as a nation state behind a series of natural boundaries. These natural boundaries included the Alps, the Jura, the Vosges, and the Ardennes, which formed a ring of mountains or hilly uplands, heavily forested, and which constituted a military obstacle which was enough so that the invasions of France all down the centuries, long before the time of Caesar, even, always came along through that low route between the end of the Ardennes and the English Channel, the route through the lowlands of what is now Belgium. One battle after another in the history of warfare in Europe was fought

in that particular area, where the lowlands of Europe, the plain of North Europe, funneled southward into France.

A great deal of the tactics of World War I were organized around the out-facing cuestas of Paris, where the layers of rock come up at an angle and the sharp face faces away from Paris. They were called the natural defenses of Paris.

Douglas Johnson wrote a book called, "Battlefields of the World War." (World War I). All of this terrain was analyzed in detail and the tactics that were related to the terrain were set forth. As a Reserve officer for many years I took correspondence courses which used the Gettysburg sheet. We fought for the high ground. I can tell you all about how you run an army through there.

Of course, you don't want it that way any more. In fact, in the intelligence business, the intelligence agencies have been again and again fighting the last war rather than a new one. During World War II they were still thinking about the natural defenses of Paris when they weren't significant any more. The Battle of the Bulge took place, why? Because they thought it was naturally difficult to come in through the Ardennes and that nobody would come through there, and it could be held with a small number of troops.

You know, by the time World War II came along and armies were mechanized, it made a tremendous difference whether you were on a paved road or off a road, and the strong points were no longer the out-facing cuestas, like Verdun, for instance. Nobody fought for the high ground. You fought for those little villages with stone houses and narrow streets, and all of the paved roads would concentrate and go through these villages, and there was no bypassing. Therefore, the strong points were places like Bastogne, where all the roads came together, and you couldn't get around it without going off the road and cutting down your mobility.

These were the strong points in World War II, but they're not any more. You don't need to analyze the potentialities of the next war in terms of that war, because it will be a different kind of war. You have to analyze barriers--military barriers and other kinds--in terms of the technology that is being applied at the time. If we have to fight a war on foot, with horses, in the jungles somewhere in southeast Asia, then you've got to go back to World War I technology, and you analyze the terrain in those terms. But there is no such thing as a final and complete analysis for the military significance of terrain. It has to be analyzed in terms of a particular technology.

Let's talk about some other things. Let's talk about Mackinder. Mackinder had an idea about the important parts of the world. Remember he said that, if you held the central part of the world island you would control the world island, and if you controlled that you would control the world. Mackinder's idea was that sea power couldn't penetrate to the continental interior of Eurasia and that therefore who held that continental interior would be in a position to control a vast area which would be able eventually to conquer the world.

This was at a time when people were still thinking about continents as separate things and about maps as hanging on the wall with the north at the top. People didn't think about the Arctic Ocean. This was something you left out, usually. On a Mercator projection you don't see this part of the world, because you can't get it onto a Mercator, and the Mercator projection is what everybody is looking at. How many offices in Washington of high authorities of military and civilian life have Mercator maps from the National Geographic pasted on the wall and blown up to a huge size. Those things ought to be torn down or painted over as of tomorrow. Nobody should be allowed to have a Mercator map. A Mercator map is useful for one thing only. It is useful for navigation in the low and middle latitudes. It's no good for navigation in high latitudes. For the low and middle latitudes the only proper way to navigate is to use a Mercator. But to use a Mercator to show the relative position of things will lead you into all kinds of errors. People like Mercators, you know, because they are rectangular. They fill up the page completely. In our culture, books are rectangular. I don't know why they are, except that they stand up or something. If we had round books the Mercator would have gone long ago. But we've got square, rectangular books. "New York Times" loves to have a Mercator map with lines drawn from Moscow to Cuba, showing the way people go from Moscow to Cuba. What a perfectly terrible thing to do, to mislead the American public this way!

No less a person than General MacArthur once made a remark that the Pacific Ocean was a moat between North America and Asia. Now MacArthur was just illiterate in terms of geography. He's a very fine person, but he just didn't know his geography when he talked this way. The eastern shore of Asia and the western shore of North America form a straight line, and the Pacific Ocean lies all to one side of this. So we are on the same side of the moat, then, with Asia. There's something wrong here if the boys start shooting in the wrong direction.

It isn't just that. Of course this sounds funny, but there's an awful lot of wrong strategic thinking, not only on the part of the general

public, which we agree is illiterate, but on the part of people in responsible positions, people who ought to know better. Our thinking is irresponsible because we have been accustomed to look at the wrong map.

Of course this up-and-down business I think has some psychological import. You talk always about going down to Latin America. This is a psychological problem, actually. Suppose you lived in Latin America and the North Americans always came down to you. Wouldn't that have some kind of impact? I think it is a bad way of talking and is dangerous from the military point of view. Sometimes you get confused about where is the lower part of a river and the upper part of it. I had a student once say, "Professor, how can the Nile flow up?" That had me for a minute. One of the mean things we do at Syracuse sometimes when they are having master's exams is to ask a student to go and point out the upper Nile. Seventy-five percent of the time he will put his finger on the Delta. We don't flunk him. We just embarrass him.

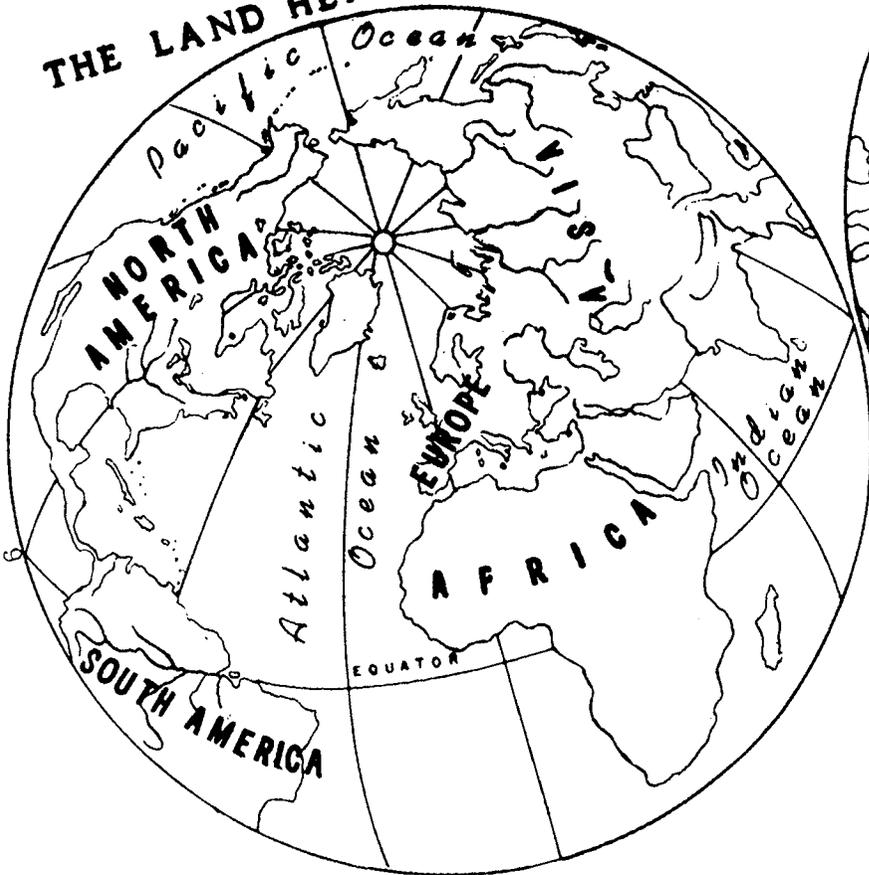
The fact is, you have to look at the world in another way.

Chart 1. -- This is another way of looking at the world, and it is a very important way. That is by picking up a globe and tossing it around in your hands until you see the largest amount of land. The fact is that on one hemisphere, which we might call the Land Hemisphere, there is 90 percent of the inhabited lands of the earth. This is it. Leaving out Antarctica, which is all ice, penguins, and people who like to go and sit there for the winter--of the inhabited lands of the earth, 90 percent is included in this hemisphere. Ninety-eight percent of the economic productive capacity of this world in terms of gross national product originates in this area. This is incomparably more important than the other half of the earth.

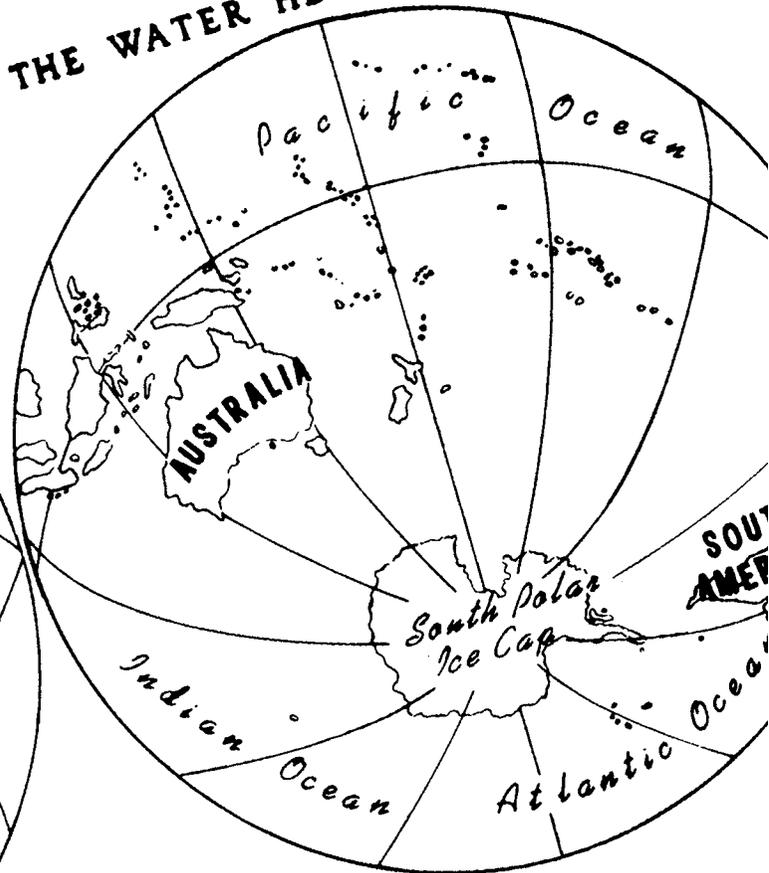
What you find when you identify the hemisphere that has the maximum amount of inhabited land, is that the center of that hemisphere is near Nantes, in France. This is the center, and you plot your map on the basis of Nantes as the center. This becomes important for the first time when airplanes and missiles are flying around. It wasn't important when the polar regions were covered with ice and impassable. They are still covered with ice, but now we go under them and over them, and so this is quite a different kind of a place. As long as you were dealing with ships that were on the ocean and where it had to be free from ice, and where you were dealing only with the middle latitudes, this position of the land, this map, was not a significant map. It became significant only when all the continents were settled, when people were scattered over the inhabited world, when economic production developed in

CHART 1

THE LAND HEMISPHERE



THE WATER HEMISPHERE



different places, and when airplanes were used to provide the major connections. When you do that you find that more of the world centers of population are closer to Europe than to any other point on the earth.

What happens in Europe is incomparably more important than what happens in Argentina, just because of this map. It makes much less difference what happens in Argentina. During the war Richard E. Harrison published an atlas in which he had Argentina there, and he had a wonderful caption on the map of Argentina. He said it was a dagger which was pointed at the heart of Antarctica. Essentially this is correct. What happens in Argentina is less relevant. Furthermore, during the war there was a while there when President Roosevelt insisted that he had a map showing plans of Hitler to take over Patagonia. I'll never forget when General Donovan asked me to make a comment on this. I made a comment. I said, "Let's give it to him." Believe me, if you are ever in the intelligence business, don't do this. What you do as an intelligence officer is say, "Well, now, this has to be watched with great care." I thought it was a good idea to let Hitler have Patagonia.

What happens there doesn't make a lot of difference, because of its position, but what happens here in Israel, with reference to these pass routes here, is critical. What happens in Europe affects the whole world. The European Economic Community, from this point of view, is the most important development of the present age. Of course one of the basic principles of political geography is that when you divide a country, or the world, into two parts which are separate and antagonistic, war is right around the corner. If, on the other hand, you can get it divided into three parts which are more or less equal, it is much more difficult to start a war.

This is the way our own Civil War started. As long as there were three parts to the United States, namely, the Northeast, the Northwest Territories, and the South, things were more or less in balance. But between 1840 and 1860 the Northwest Territories and the Northeast United States were tied together by railroads and commerce, and the North became the unit opposed to the South. Trouble.

Suppose you have a world in which a third power arises. The third power could be Europe. Europe has the skill, the technology, the population, and the resources, but more than anything else the position to make it of vital importance in this world. I don't think anything is more important for world peace, not even the retaliatory capacity of the United States, which of course is vital. If the development of the European Economic Community can really overcome 18 separate political

borders, countries thinking in preindustrial terms of self-sufficiency, this will be one of the most important developments toward world peace. It is a preindustrial concept that a country to be strong must be self-sufficient. This is impossible. In the modern age you can't be both strong and self-sufficient, particularly when you are dealing with a small extent of territory like France, Germany, or any one of the countries of Europe.

If you eliminate the barriers, all of a sudden prosperity comes. Look at what is happening in Europe. The Original Six of the Common Market are absolutely thriving. The change in the economy of Europe just since 1957 is one of the most exciting things going on. If you could broaden that to include the rest of Europe, you would have a most important development toward world peace.

Let's paraphrase Mackinder. Mackinder is now out of date. His center is no center, except as you have continents oriented with the north at the top and oceans around at the side of them. But if you look at the globe now, what you find is that this is the center of the globe (land hemisphere). This is the central area, the heart. Who controls the center of the land hemisphere controls the world. This gets Mackinder up to date. This is a new concept.

Now let's look at the other part of the world.

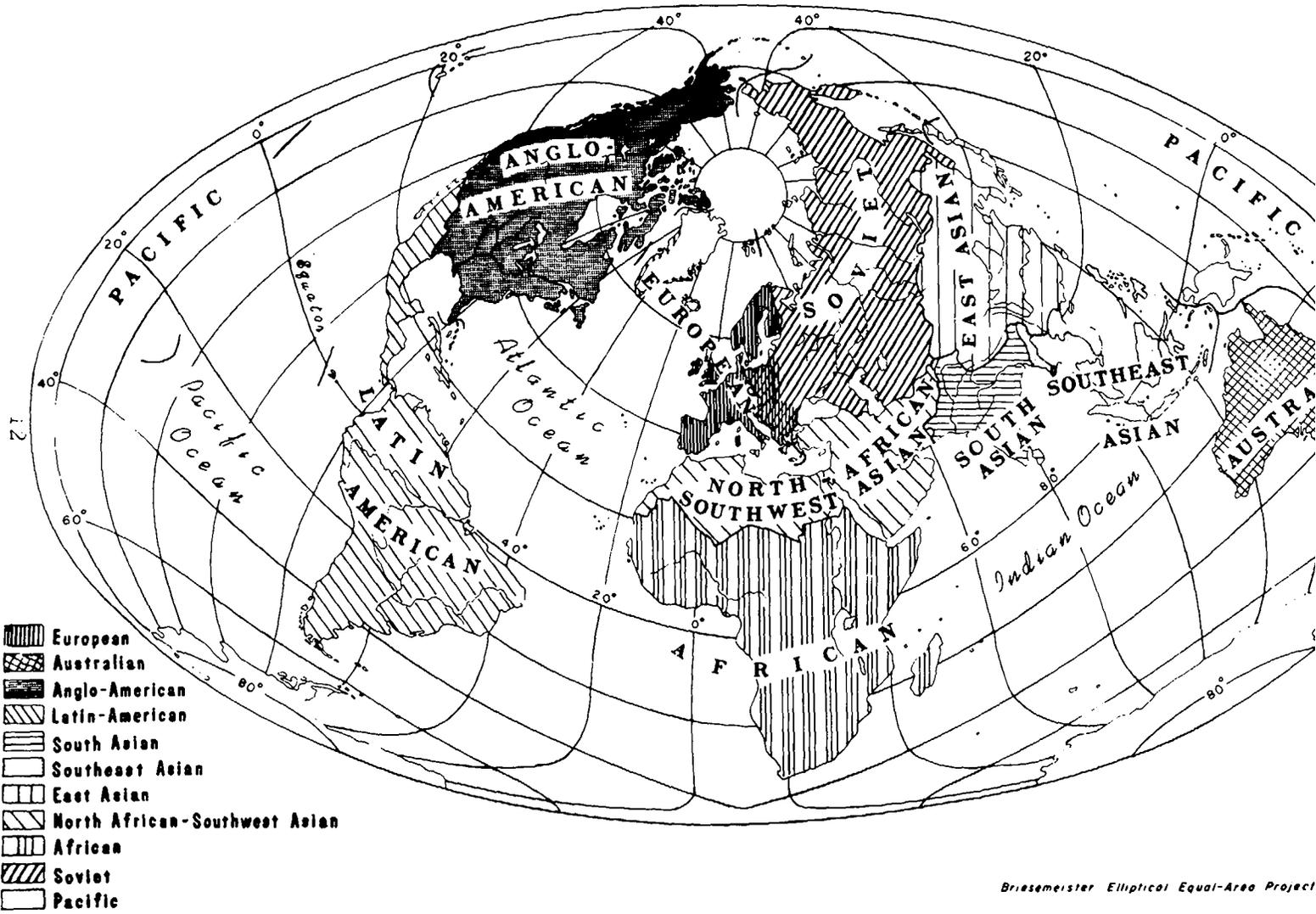
Chart 2. --Let's talk a little bit about the development of these culture regions. This is another view of the world in which things are spread out so that you can see all of them on one piece of paper, but it doesn't cover the whole piece of paper the way Mercator does. It has the advantage of equal areas, and it does show the importance of the relationships of Europe across the polar regions.

The fact is that the world today is going through a revolutionary change. Everybody knows this, but I am not sure that everybody quite realizes this in terms of the perspective that the anthropologists give to us. If you consult the anthropologists, you will find, I think, that most of them agree that during the million years or so that the human species have been running around on the earth, there has been for most of this time very little culture change. Culture is permanent, it's something that is stable. Change in culture is not the usual thing, certainly not fundamental change.

The anthropologists will point out that there were four great revolutions in the relations of man to the resources of the earth. The first

CULTURE REGIONS

CHART 2



one took place when man first learned how to use fire and tools. This was so long ago that nobody knows exactly what happened, but you find evidences of a tremendous change at the time when people learned how to use fire for cooking and weapons.

The second of the great revolutions, however, is pretty well known. This is when man first learned how to domesticate plants and animals. This is the change from the paleolithic to the neolithic. This started right over here in southern Asia. It was right here that the first domestication of crops took place--taro, bananas, and rice. Also in here was the first domestication of animals--pigs and poultry. And right next door here is the domestication of cattle.

Now, the people who tied in crops and domesticated animals had, in the first place, a much greater capacity to support population per square mile. In the second place, they had much greater military power. Consequently, they began to expand and push the poorer and weaker people out before them. The poorer and weaker people were pushed into these peninsulas that stick out here. Here is the southern part of South America and the Firegian Indians. Here in Africa are the Hottentots. Here are the Pygmies. Over here are some more of these Pygmies, and the Bushmen of Australia. These are very primitive people who were pushed out from this center where this great culture change took place.

The third of the great revolutions can actually be dated. This was at the beginning of written history. These were the Early Civilizations, of which there were six, when man first learned how to set up a public administration. What it really meant was he learned how to administer a government and to bring people together, protected by a police force, and kept in order by police. This meant that there was freedom from raids and from constant warfare so that farmers could produce more food than they could eat themselves.

This resulted in the separation of economic classes. Some people in the cities could become administrators. They could become army officers or police officers. They could become traders, the commercial people who bought and sold food and other products. They could become priests of the church who were free to look at the stars and begin to measure and map the things on the earth.

This development began over in this part of the world, in Mesopotamia, where in 4700 B.C. you had the earliest of these civilizations. In 4500 B.C. it began in Egypt; and in about 4000 B.C. in the Indus Valley of what is now Pakistan. There were three of them in the same kind of situation--big river valleys and the desert.

It was very different over here in the Wei River Valley and the lower Yellow River, in China, where Chinese civilization developed, where water was more of an engineering problem than a legal problem. In Egypt it wasn't an engineering problem. Annual floods were used to moisten the land, and the problem was legal--how to define borders, how to get taxation out of the people. The water problem was a legal one here, and in Pakistan and in Mesopotamia. But in China it was quite a different kind of problem.

Then there were two other early civilizations that did the same sort of thing. They are usually left out by historians. One is the Maya civilization, over in our part of the world, and the Andean civilization, in Peru. In both those cases also public administration tied people together in cities, and there was a separation of economic classes. Incidentally the Inca Empire was the only example the world has ever seen of a pure Communist state.

Nothing happened for a long time, but many of the basic ideas developed at the time of this revolution of the Early Civilizations are still in form. One is the idea that if you are strong you should go out and conquer everybody. This is a Babylonian concept, and Egyptian. The Babylonians and the Egyptians during the course of a long period of history were engaged in conquering back and forth, first one and then the other. Then somebody else would step in and conquer. There have been more conquests in this part of the world than anywhere else.

So the idea that to be strong you must be self-sufficient and have possession of resources and markets goes back to that period, also the basic technology of living, that is, power supplied by human and animal muscle, wind, and falling water. This was the technology of life, and remained the technology of life during all of the centuries since then.

Who held the political power? Army officers. These were the people, because the aristocracy who controlled the land were not numerous enough. They were the ones who had the veto on the army officers but the political power was in the hands of the only people who controlled force, and the force was military force. Therefore army officers controlled the politics. This concept developed in Mesopotamia, and came from there to Egypt, to Crete, into Rome, and on through into Europe.

Now we are in the midst of the fourth great revolutionary period in human history, and we are just starting it. This isn't something that is standard procedure. That is, the changes in the way of living, the changes in technology that are characteristic of this age, are not normal.

We haven't had a fundamental change in technology since the beginning of this rule of law and the control of politics by military force. We didn't have a change in living until 1769 when James Watt invented the steam engine. Right after that you had a whole succession of firsts, when controlled inanimate power replaced human and animal muscle. With half the amount of expenditure of energy man can now produce vastly more in the way of goods and services than ever before. And, of course, his demand for raw materials has become incredible. So that more coal has been mined, let's say, in the last 20 years than in the whole previous history of mankind. We are just having an incredible expansion of the production of goods and services.

This is what we call the industrial revolution. Well, if you go into the early dates, you begin with 1769. The first passenger railroad was in 1825. This wasn't so long ago. As I pointed out, the big production of coke with the use of bituminous coal through coke into the steel business was only 1858. So that the industrial revolution was just getting started with the application of steam. Steam required steel. Steam was applied first to pumps. Then it became useful in the textile industry. Then it became useful in transportation, and for the first time man could transport vast quantities of things at low cost and high speed.

The result is that the world has been transformed through what we call economic development. Those countries that have gone through the economic development process are now developed countries. Those other countries that have not are no longer underdeveloped countries, they are developing countries. That is most of the world. It hasn't got the industrial revolution yet but it wants it. This means, of course, a great concentration of people in cities, an enormous increase in the proportion of city people, and an enormous increase in the size of cities.

The first city to have a population of a million was London in 1802. Now there are over 100 cities and city-clusters of over a million people each. So that you have a tremendous increase in cities. You have a decrease in the proportion of people employed in agriculture. The employment figures show agriculture employment going down from 75 percent to mostly less than 20 percent, except for France, where it is about 36 percent. But in most places the proportion of people employed in agriculture has gone away down. The agricultural revolution that has taken place since the war has been accomplished with a third fewer farmers. All of this is part of the industrial revolution.

But there is another revolution going on at the same time, the democratic revolution. To see clearly what is happening it is better if we separate the industrial revolution and the democratic revolution.

The democratic revolution consists of certain demands on the part of individual citizens; the right to equality before the law; the right to protection from arbitrary acts of those in authority; the right to select your own government and to be represented in it; the majority rule and the secret ballot; the right to knowledge, free speech, and the discussion of public issues. These are parts of the democratic revolution.

Both of these revolutions originated in this central area around the North Sea, and they have spread from there. You have to look at this both historically and geographically to get the full picture, because it was the spread of these revolutionary changes and the impact of these revolutions on the preexisting, preindustrial, predemocratic societies which produced this present-day world.

I think the present world is comprehensible only if you look at it in terms of spreading revolutions. You can hook together the things that are happening today in Latin America with what happened in Europe a century ago. Today Latin America is getting the full impact of both revolutions. In many parts of the world, however, the democratic revolution is being denied. The Soviet Union and the Soviet culture region denies all five aspects. These are the reactionaries.

The great revolutionaries in this world are the Europeans, the Anglo-Americans, and the Australians. We are the revolutionaries. The reactionaries, who are against the greatest revolution that has hit this world for thousands of years, are the Russians, the Communists. For Heaven's sake, if you are going to win this war, you know perfectly well that you have to get on the offensive. You've got to stop being against communism and be for democracy. If you don't do this we can't win.

It is my theme that we are in world war III. World war III is no longer a war like World War II in which you shoot things at people. It is a war of ideas, and it's going to remain a war of ideas, because of the stalemate on weapons. Of course there will be all kinds of little skirmishes and shootings. I am not suggesting the disbandment of the Army by any means. What I am suggesting, however, is that you've got to be ready to fight in the new dimension, and that's in the dimension of ideas, because there is where the war is going to be fought to the finish. The day you start shooting will only just postpone the ultimate resolution of the battle between democratic ideals and autocracy.

The world is divided today into these culture regions. Each culture region can be defined in terms of the impact of the revolutions on

preexisting cultures. You can describe certain uniform characteristics of each of those culture regions. You can make generalizations about those culture regions.

For example, anybody who talks about Africa as a whole is talking nonsense. North Africa belongs with southwest Asia. You've got to talk about Africa south of the Sahara, not sub-Saharan, but south of the Sahara. You have to separate the great culture of India which is so vitally different from the culture of China. You can make a long list of fundamental differences, one of which, of greatest importance, is the pragmatic attitude of the Chinese, where the results are more important than the ways of attaining them, whereas in South Asia and India the way of doing something is more important than the results.

That sounds vague, but, believe me, it is not. This applies specifically to every contact you will have with these two very different kinds of people. Southeast Asia is the battleground in between where these two great concepts of life are intermingled.

You can find, I think, a great deal of clarity, by thinking of the world as divided in this way and by recognizing the importance of the position on the globe of these different culture regions.

I promised to stop at 9:30. It is now 9:30. You are going, I believe, to have a breather, and then we'll have some questions and discussion.

CAPTAIN CASTELAZO: Gentlemen, Dr. James is ready for your questions.

QUESTION: Sir, you relate communism as a reaction to the third revolution and equate democracy with industrialization in the fourth. Where do you see the various shades of socialism in this picture?

DR. JAMES: I didn't mean it exactly the way you stated it. I think of the fourth revolution as including two parts. The third revolution, of the four revolutions of all human history, was the rise of the early civilizations. The fourth revolution consisted of two parts, namely, the industrial revolution and the democratic revolution, which are often confused. I think you are clearer if you separate them, for two reasons: One, they did originate in about the same place and at the same time, but they have spread quite differently. In some places now, like the Soviet Union, they are eagerly adopting the industrial revolution but are denying the democratic revolution.

As to these shades in between, I think that one of the problems in dealing with the Soviet Union is the fact that we are not engaging directly head-on. We think of our democracy as opposed to communism. Actually, the opposite of communism is capitalism. The opposite of democracy is autocracy. We are just missing a little bit here.

My personal feeling is that we sometimes get ourselves enormously worked up about words like socialism. I have made a lot of speeches to very conservative people. I talked to the Economics Club at Worcester, Massachusetts, a while ago about this, and I don't believe there is a more staunch group of 100-percent Republicans than you will find there, and I got out of there alive. One of my efforts was to try to explain what a liberal is. There isn't any word for a fellow who is in favor of the democratic revolution, unless you can say that he is sworn to uphold our Constitution. What kind of a guy is that? What do you call him? You can't say he is a Democrat, because Republicans also do this. You will find, in the Constitution and in the Declaration of Independence, the most complete written statements of the democratic revolution that exists in the world.

Who are the people, then, who are in favor of those ideas? Well, in Latin America they call them liberals. I am usually talking about Latin America at this point, rather than the world as a whole, because I don't know anything about the world as a whole, but when it comes to Latin America, I spent 40 years studying that part of the world and I think I know what happens in those places. Those people who are in favor of the ideals in our Constitution are liberals.

Now, you may be in favor of those and at the same time vote for socialism. I had this question batted up to me a while ago about Sweden. I said, "Sweden is a very democratic country." Somebody said, "Oh, but, how can you say that? It's pure socialism." These are irrelevant. If you have a democratic country and you have an economy which has reached maturity--that is, the industrial revolution has gone through a cycle and has come out with a tremendously complex, intricate, diversified, industrial structure that is characteristic of a mature economy--then you have three choices, according to Walt Rostow: You can go and start conquering everybody in the pre-industrial manner inherited from Babylon; or you can set up what he calls high mass consumption, that is, a large consumption of consumer goods; or you can set up a welfare state. A welfare state I suppose you would call socialism.

This is not the antithesis of democracy. Democracy is another thing. Democracy has to do with those five things I told you about. The opposite of democracy is autocracy.

Now, in the case of our relations with the Soviet Union, I say that these people are denying all five aspects of our revolution. They are the reactionaries as far as the democratic revolution goes. You ought to see capitalism sneaking into the Soviet Union. That's another subject. I don't want to get into that. That's where they are producing potatoes today on private farms. They are giving little pieces of land to members of the collectives. Members of the collectives on their own little pieces of land can raise food, and they raise more than enough for themselves, so they are now allowed to sell it. They are going capitalist. Meanwhile, Benjamin Franklin started us on the road to socialism, when he invented the Post Office.

QUESTION: I am having trouble reconciling your statement of the lecture and the answer to the question, that the industrial part and the democratic part started out from the same center and spread out in different ways at the same time. It seems to me that what happened was that the industrialization led to colonizing the rest of the world to support this industrialization. It is only now in a time frame later, say, in terms of Britain's long-term decolonization that you can consider this as part of the same thing. Can you explain this a little bit?

DR. JAMES: Yes. I wouldn't go along exactly with that. First of all, remember my definition of the democratic revolution, those five things. Those you will find were invented around the North Sea, and over a period of decades and even centuries led up to the period from 1760 to 1800, which was the maximum period of the development of democratic ideas in Europe. I mean, the idea of equality before the law is British common law. You can read the history of how common law was evolved. Ever since the time of the Magna Carta on through, common law was gradually elaborated by precedent. This basically is equality of the individual before the law, and protection from the arbitrary acts of those in authority. This is British.

But the British never asked for popular sovereignty. In fact, they didn't have adult male suffrage in Britain until 1880. It was the French who asked for popular sovereignty. This is a French idea. The right to select your own form of government is Dutch, The Netherlands. The first written expression of that was the Plymouth Compact of 1620. These boys were English people, who had been living in The Netherlands. They picked up the idea from The Netherlands, who had been demanding the right to select their own form of government. They fought Spain on this. They fought all the greatest European powers. The demand of the right to select your own form of government developed in The Netherlands.

It is an amazing thing how in that little area, right on the North Sea, these two separate things did develop.

The modern period of the end of colonialism is the latest phase of this thing. That is, the democratic revolution has spread, but as it spread it got blurred. It isn't the same thing any more. People in Africa haven't the slightest idea what is meant by equality before the law.

I've got a map coming out shortly, a colored map in a book, which is really the story of Africa on one piece of paper. That is the tribal areas. Superimposed on those are the modern state boundaries. The loyalties are to tribes, and within the tribes there is no equality of the individual. The head man is the guy who runs the tribe. The individual has certain rights and prerogatives within the tribe.

In each one of these culture regions you have a different reaction. These revolutions become changed, modified, blurred, as you go from one culture into the next one.

I don't know whether that answers your question. What I am aiming at here is to point out that each culture is a separate problem, the way it is developed.

QUESTION: Sir, in your world power map showing the land hemisphere, you discount in a sense the southern part of South America. Will you please comment on the dagger which exists or does not exist in southeast Asia?

DR. JAMES: Southeast Asia is within that hemisphere. Southeast Asia, of course, is right on the edge of the land hemisphere. Are you talking about southeast Asia, or about Argentina?

STUDENT: I am talking about southeast Asia. It's a little off there.

DR. JAMES: Well not very much. It is on the periphery. Indonesia gets over the edge. I would say this, though, that southeast Asia is much less important in world affairs than either of the great centers on each side of it, namely, China and India. Southeast Asia has been the battleground between India and China. That's the whole story of it, the invasion of southeast Asia by Chinese who bring with them the Chinese attitude, the pragmatic attitude, which permits them to shift ground so that you can't pin them down. They say they are interested in results rather than the methods of getting them. These people are absolutely unstable.

They constitute, as you know, not only minorities but in some places majorities in southeast Asia. But they are superimposed on Indian attitudes and Indian ideas. Of course the native peoples in there have been pretty well submerged, first by the Indians and then by the Chinese. This is at the present time also a matter of the greatest strategic importance, because of, at least at the moment, the tremendous importance of tin and rubber. This is the place in the world where you get tin at lowest cost. Our Bolivian tin is high-cost tin. We only keep Bolivia operating, I think, for strategic reasons. You wouldn't do it for economic reasons. We can get all the tin we need at much less cost by getting it from Malaya. Tin is one substance which at the moment I believe has no substitute. Maybe tomorrow there will be. But today there is no substitute. Automobile bearings, machined bearings, have to have tin. We need it also for solder, and for various kinds of things. Tin is essential in modern machinery. You've got to have tin. That means that tin is of tremendous strategic importance in Malaya.

That complicates, you see, the interaction of the culture regions. It complicates the development of these two great revolutionary ideas. It is complicated by the strategic importance of minerals in a particular place.

QUESTION: Sir, if I can drag climate into topography, I wonder if you would care to comment on the extent of Soviet agriculture and Sino-Soviet agriculture as contrasted with the United States with respect to war potential.

DR. JAMES: You realize that as far as Russia is concerned it lies really in the latitude of Canada. What you have to do is compare Canada and the Soviet Union. The Soviet Union has really had a dismal failure in agriculture. The Communists have not succeeded in developing agriculture as they have industry, for various reasons. The thing is particularly bad with the Soviet Union. The farmers want land of their own. This is a basic fact. People want to cultivate their own land and not work collectively on land. This doesn't work. But, in addition to that, you have a climatic hazard. You have a short growing season. You have tremendous drought in the wintertime. You have cold-air masses that are so dry that they evaporate the snow, and the snow is what you count on for getting moisture into the soil. The result is that their crop yields are very irregular. Many times you have famines develop because of a series of cold-air masses that have taken away the moisture.

They have tried to plant shelter belts, and this is just plain nonsense. The shelter belt doesn't work anywhere. It takes water out of

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the soil rather than putting it in, and it doesn't shelter more than just a short distance away from the trees. But the Russians are convinced that the shelter belt is the answer. This is a dismal failure.

They are, however, beginning to use water out of the Volga River to irrigate, and irrigation may be part of the answer to their problem. They have done wonders in Central Asia, around Tashkent and Samarkand, where the cotton is growing. This looks like parts of Southern California. It's a terrifically luxuriant cotton production, due to irrigation in desert country.

Climatically, there is only a very small part of the Soviet Union which is really arable. It's all nonsense to talk about how you can extend the limits of cultivation northward. Of course you can if you do it in a greenhouse. These fellows do it in a greenhouse. They raise food for the lumber operations in a greenhouse. Then they put the line north of that and say it is the northern limit of agriculture.

I'll tell you one thing--these are the biggest bunch of fakers in the world when it comes to their maps and to statistics. You just don't need to believe statistics or maps until you analyze them. You may find it is to their advantage to give you the honest facts. Therefore you will find facts mixed in with fancies. You really don't know whether you are getting the stuff or not in Soviet statistics.

In China this is quite a different problem. You have a tremendous concentration of people where economic development is stifled by population growth. This is really a different problem. It is not climatic. It's really a problem of overpopulation. They have a population growth of nearly 3 percent. This is about the maximum growth of population which is permitted by the biological process of reproduction, about 3 percent per year.

You've got to have economic development, then, of at least 4 percent a year to stay ahead of that. In order to do that, you have to have something like a 3 percent per year increase in capital investment. When you have a country like China with less than \$100 per capita gross national product, how on earth are you going to take 3 percent per year and increase the capital investment to that degree?

They are doing it in the Soviet Union. The Soviet Union is taking 25 percent of the gross national product and putting it back into new capital. They are doing this by exploiting their workers. The workers are not being paid. They are not being given the housing, the clothing,

and the food which you might think they would want. The exploitation of the worker in the Soviet Union is certainly comparable to what went on in Britain in the early 19th century.

QUESTION: Dr. James, I am a bit confused about your distinction between the political aspects of our struggle with communism. You pit democracy against autocracy, and then you economically pit capitalism against communism. Do you think that there could be a democratic communism in the course of those things?

DR. JAMES: Well, there never has been. I think I am correct in saying that the only political unit that ever voted freely for communism was San Marino. Am I not right? Did anybody else ever vote for it? San Marino voted for it, I think, because they wanted to sell more postage stamps.

Communism, you see, is something that would mean that the individual would give up some of his rights and status to a leader, and, therefore, you wouldn't expect to find that a democratic country would vote in favor of communism. In many cases they have voted for the welfare state, as in Sweden, where they now have you retire on an income of \$4,000 a year, and stuff like that. They really have things all fixed up so that they don't have to worry. You don't ever have to have a thought for the future, because you will be taken care of.

This is not communism. I should say that communism as a system might be exactly what would work in the Soviet Union. In fact it is working there. People are happy with it. Let me put it this way: I think that you have to think of communism as a religion. The people who believe in the Marxist-Leninism religion believe in it the way you would believe in some denomination. If you are a Catholic or a Protestant, you believe, you have a faith in certain religious doctrine. These fellows have a faith, a religion, and believe in Marxist-Leninism. Religion has been eliminated in the Soviet Union otherwise. The churches are still there, but only for old people. The young people, however, join in meetings where they discuss Marxism-Leninism. They talk about it with downcast eyes. This is worship. They've got their prophets, they have their churches, and they have their missionaries. It's a religion, and you have to face it and attack it as a religion.

It's like Islam, actually. There's a tremendous lot of similarity between what happened in Islam after Mohammed and what happened in the Soviet Union after Marx-Lenin.

QUESTION: You referred to Dr. Rostow's theories. You have seen Russia at first hand. Would you give us your impression as to what condition identified with Rostow's stages Russia is in?

DR. JAMES: In the first place, I am told by my economic friends that Rostow is a bad word. I don't know why, because I am sort of taken by his stages of economic growth. I think this is pretty good. Of course no economist who is a professor can agree with any other one. He'd lose caste, you see. So maybe this is it.

I'm not sure about Rostow. But, as I understand it, I think that the Soviet Union is just about beginning to enter into the stage of maturity. That is, it has gone through the initial phase, the takeoff into the drive to maturity. Now it's ready to diversify. This is what is actually happening. At least they claim that they are now going to stop developing simply along the heavy industry sector of the manufacturing structure and they are going to develop a variety of industries.

But you see, here's one of the difficulties in the Soviet Union. It really doesn't fit very well into Rostow's stages because, in the Soviet Union, you have the basic principle of setting up autonomous and self-sufficient economic regions. They take economic regions very seriously. There is an important publication of CIA which has a map of economic regions in it. I hope you all can see this. It's a very important map, because each one of those regions becomes an essential unit, economically autonomous. Each one is to have its steel industry, and built around that basic steel industry a whole cluster of industries in each one of those economic regions.

Of course, each one will raise a product which is unique, but insofar as possible--and they are very realistic about this--they will plan each region as an autonomous unit, thereby cutting down enormously the specialization of economic production. So that you have theoretically, I suppose, a mature industry development in each one of these regions separately, rather than in the country as a whole.

The analysis is quite different, I think, than the one Rostow made.

CAPTAIN CASTELAZO: Gentlemen, our time is up. If you care to continue the discussion with Dr. James, he will be down in the little room off the cafeteria after this period. You are all welcome to come and talk with him some more. Many of the ideas touched upon in the lecture will be more fully developed and presented by Dr. James in his book "One World Divided" to be published by Ginn and Co., in 1963.

Dr. James, on behalf of the Commandant, the students, and the faculty,
thank you for giving us a wonderful new look at world geography.

(3 April 1962--5, 600)O/ijk:mr