

INFLUENCE OF GEOGRAPHIC FACTORS
ON NATIONAL POWER

3 March 1955

1865

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Washington, D. C.

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DR. HUNTER: General Niblo, General Scott, fellow potentialers: The subject for our consideration this morning is the "Influence of Geographic Factors on National Power." This reads more like the title of a 2-volume treatise than the subject of a 50-minute lecture.

When Dr. Renner was first approached in this matter, he must have thought, in paraphrase of Frederick the Great's famous comment: I don't know whether this subject will frighten the audience, but by ---, it frightens me!

Dr. Renner, we appreciate your willingness to undertake so large a task in so brief a time. You have a sympathetic as well as an interested audience.

DR. RENNER: General Niblo, General Scott, Dr. Hunter, and officers and students of the Industrial College of the Armed Forces: It is my very great pleasure this morning to address you on the relation of geographic factors to national power. This may sound simple, but actually it is not. It involves a great many factors and a great many complex relationships. The matter, however, may be simplified, or perhaps I should say some of the foliage may be cut away right at the outset, if we resort to a definition, specifically the definition of what is meant by geographic factors.

Most modern geographers define their science as "The Study of Human Affairs in relation to the Earth Environment." Or to put it in a little more dynamic terms, "Geography is the strategy of men, space, and resources." Consequently, geographic factors may be regarded as including anything that enters into this strategy. In that strategy enter such things as location, space, usable natural resources, limiting environmental factors, industries, transport patterns, technologies, and even the ideas in men's heads underlying the exploitation of natural resources.

Any one of those could engage our attention and discussion for a considerable period. Indeed, even to list them all would take up most of the time available to me this morning. Since I cannot treat all or

even many geographic factors, I shall bypass all of them except the factors of location and space; even the treatment of those two will not be exhaustive.

I might, though, make a side remark about our treatment of basic resources underlying economic production. As a youngster in college--and at that time I intended to be an economist, not knowing that there were certain pitfalls in that--I learned that economic production was something that an entrepreneur did if he had capital and if he could find the labor. Since growing to maturity and abandoning economics as a livelihood, I have discovered that economic production produces nothing. It is merely a process of transformation--the transformation of geographic goods into economic goods. In other words every single thing that we produce, even services, makes use of natural goods, or as the geographer calls them natural resources.

That being the case, one would think that any smart nation would make a complete inventory of its natural resources. I might add that I don't know exactly what the USSR is doing, but we Americans have never made an inventory of our natural resources. We haven't any reliable notion how much capital, in a geographical sense, we have. We once had an agency, the smallest and most nonpartisan agency ever set up in the Government, which began the job of studying America's natural wealth. It was known as the United States National Resources Planning Board of the President's Executive Office, and I had the very great fortune to be a staff member of that Board. The Congress, however, went on an economy spree and abolished it. It was a sort of intelligence organ of the Federal Government, but it was a good place, so thought the Congress, to start to economize.

I am appalled by the almost incredible fact that a great nation such as ours, even now in the heyday of resource utilization, would fail to make an inventory. And so, if I talk about potential and actual industromilitary power in the United States, I can only do so in terms of output, not in terms of resource equipment, because we have no inventory of the latter.

Abolition of even the Soil Conservation Service, which is entrusted with the job of keeping our soil resources in good repair, was last week proposed in the Congress.

Likewise, under the present Administration--and don't get the notion that I am a Democrat from what I am going to say--we have had

raids and attempted raids on the Nation's natural resources, such as tidelands oil, the national parks, the national forest resources; and the Nation's waterpower resources. I am appalled by these and other examples.

A great nation, even one as great as the United States, needs careful inventory, good resource management, and wise public policy. Theodore Roosevelt once remarked cogently: "For two hundred years America has managed to mismanage its water resources." The Dixon-Yates power contract looks like mismanagement; tidelands oil moves look like more mismanagement.

However, this is not to be a discussion of our national resources base. I can go to the other extreme and give you the figures on the production of goods in the United States. Under an efficient technology, however, the rate at which goods are produced, as their price, bears no relation to the scarcity of materials out of which they are made. And so we could be approaching the end of our resources in any particular category and, at the same time, the goods made from them might reach an all-time low.

It has been reported that when President Truman called in the managers of Big Steel and said, "Gentlemen, how long will it take you to tool up for war in case we are unfortunate to get into one?" They said, "We can't do it. We have run out of high-grade iron ore." In other words the United States has run through the finest deposit of high-grade iron ore in the world in 60 years. And at the time that this was occurring, steel was so cheap that it wouldn't pay to reuse it and so it was shipped to Japan as scrap. Of course, we got it back later, but it wasn't much good to us by then. I used to stand on the dock at Seattle and watch shipload after shipload of scrap iron going to Japan. It cost less practically to give it away to Japan than to send it back to Pittsburgh for resmelting.

Far worse than our failure to make an inventory of our resources, is the fact that we don't even have a resource policy. The most important thing I can talk about then is not an inventory, nor a policy, nor even total production, because I suppose 90 percent of our production today is going in the direction of butter, not guns.

Every time I open a bottle of beer, I look at the beer bottle and it says, "Throw this away; don't reuse it." How much of our economy is bent toward producing things you are supposed to throw away?

I think about 90 percent. One of my friends once tried to negotiate a shipment of vodka from Russia. The Russians said, "We will send it but you will have to furnish the bottles." They produce nothing to throw away. If we outstrip them 10 to 1 in economic production, it doesn't mean much in such a case; comparative figures become useless.

I think, therefore, the best thing we can do this morning is to talk about the ideas in men's heads. Not that I am a psychologist. My students at Columbia sometimes accuse me of being the world's worst psychologist. But I do think ideas are extremely important. With that observation I shall bypass all factors of resources, economic production, transportation, and mechanical energy, and discuss the geographical factors of location and space and their bearing on national power and the human ideas behind them that have even a more crucial bearing. For that purpose I have put before you an odd-looking thing called a geopolitical diagram. I think this is an extremely pregnant device and I submit it to you. (The geopolitical diagram and maps were not reproduced.)

Here it is, an ellipse in shape. (An ellipse is a circle that has been mashed until it is lopsided, the center breaks in two and makes two foci.) I call this the USSR-Manchurian ellipse. The two foci are marked M and H--one is Moscow, the other Harbin. Connecting those two foci is a single railway. The United States has many transcontinental railroads; the Russians have one. It is known as the Trans-Siberian Railroad. It runs from focus M to focus H. Then you notice at each focus it breaks up. At the Harbin focus, one branch of the South Manchurian Railway goes southward to Dairen and Port Arthur; the other branch, the Chinese Eastern Railway, runs to Vladivostok. At the Moscow focus one arm reaches toward the Baltic and Leningrad; the other one toward the Crimean Peninsula in the Black Sea. At the termini of these railroad branches are four naval bases. In the west, are Kronstadt Island and Sevastopol. At the far eastern end are Vladivostok and Port Arthur, and at each one of those are presumably a nest of submarines, fleets of planes, and other defensive weapons guarding the outlet of Russia on the four bodies of water--the Baltic and North Sea; the Black Sea and the Mediterranean; the Sea of Japan; and the East China Sea.

If you will look at the map of the USSR, you will see that it fits the general shape of this elliptical geopolitical diagram, but on the northern side, where I have drawn scallops, there is the frozen Arctic Ocean. Henry Hudson, John Paul Jones, and many others have tried to sail through it but they did not get through. It is a fine sheet of armor for everything except planes.

The power ellipse of the Soviet Union is sealed off on the southern side, also. There you will notice the symbols for mountains--the so-called roof of the world--the Armenian, Elburz, Pamir, and Tibetan mountain system. There may be somebody in this room who has tried to fly over that area. If so, he knows there is a pretty good shield on that side of the ellipse. But at the two ends, the country is wide open. In the west, the German-Polish-Russian plain leads right into western Siberia. At the other end, the plains of the Sungari and Amur extend into the high plateau of Angaraland in eastern Siberia. An army, could, therefore, invade the Soviet Union from either end, very well from the west, with some difficulty from the east, but not at all from the north and south.

The Russians have, in deference to this condition, put naval bases at each end and they have connected them with a supply line which is rather meager, and they have begun to distribute their industrial districts all along that trans-Siberian line; certainly not all in one place as we have. /If you were to draw a rectangle from Portland, Maine, out to Milwaukee, southward to St. Louis, back to Washington, D. C., and then on north to New York and Portland, Maine, you will take in about 60 percent of all American industry. An economist friend of mine has figured out how many ordinary, large incendiary bombs, not of fissionable materials, would be required to burn it all up. The answer is a surprisingly small number. And so in any calculation, even one not based on the atomic bomb, the United States is extremely vulnerable, and even the individual centers within that great industrial district are extremely vulnerable because they are so highly concentrated. Ever since the Second World War we have been further concentrating most of our manpower, most of our business, most of our banking, most of our transportation, and most of our manufacturing into the American industrial rectangle. / On the other hand the Russians have been disseminating their industry throughout the great center of their ellipse. They have, however, viewed their space rather conservatively if not indeed, pessimistically. They realize that the ways into the Soviet Union are over the plains of the West, or up through the valleys of the Amur and Sungari in the East. Therefore, they have tried to erect a series of cushion states around them. That is not for offense--at least we have not ourselves regarded it as offensive when we did a somewhat analogous thing in the Caribbean, and we do have a series of "satellites" in the Caribbean Sea realm.

When I taught at Stanford University, one of my assistants was the nephew of the President of one of the Central American Republics.

He said, "I am the only pro-American in my country." I said, "Why are your people anti-American?" He replied. "Because my uncle, the President, cannot make decisions, nor even my father who is Minister of Education, without cabling Washington and asking what that decision shall be. And so, of course, they hate you." I finally said, "Look, Roberto, Why are you pro-American?" He said, "I played football on the Menlo Park Junior College team." "Do you mean," I asked him, "that all it took to make you pro-American was that?" He said, "That is the only reason, and when I return home, I shall go as a missionary to 'sell' the United States at home." It is obvious that just a little team play made a violent anti-American an ardent pro-American. We as a Nation seem never to have learned that simple truth. We have instead nourished a satellite condition in most of the Caribbean countries. The Russians have done the same thing. I don't know what their methods are because I don't understand their psychology, but I can observe the results. They have built up a series of satellites around each vulnerable end of the ellipse and I have tried to show these diagrammatically by a group of tangent circles with initials in them.

On the west they start with Finland, Sweden, Eastern Germany, Poland, Czechoslovakia, Rumania, Bulgaria, Greece, and Turkey. At the other end are North Korea, China, and Outer Mongolia.

You see the basis of Soviet diplomacy then is to build up a cushion, pad, or buffer zone at the two relatively indefensible ends. That is a controlling idea, and in some respects it is the same idea that we used and still use in the Caribbean area. The United States looked at the Soviet efforts and said, "That is offense." Whereas our own similar efforts were "defense." We have made a strenuous attempt to peel those Soviet satellites away. On the elliptical diagram, the satellites colored red are those which the USSR has managed to hold. Those colored green are the ones we have succeeded in prying loose--Norway, Sweden (partially), Western Germany, and Denmark, which block the Soviet outlet via the Baltic. On the south, Turkey and Greece form a pincers across the Black Sea outlet. The Japanese islands block the Soviet outlet from Vladivostok. Formosa and South Korea form a pincers across the fourth possible outlet. In other words the USSR now has no outlet to the ocean that we have now not blocked. These are two space plans for achieving national power. Had the United States and/or the Soviet Union been motivated by different ideas, the world would have a different power equation today.

I want you to see the simplicity of the pattern of power shown on this geopolitical diagram. The Russians say it is defensive. They want to build up these cushions or satellites at the vulnerable ends. We say that we, too, are defensive in our moves, even when we shut all the exits from the USSR and board them up. More than that, we put a military undertaking in Korea exactly between the Soviet naval bases of Port Arthur and Vladivostok. We put a propaganda undertaking between Kronstadt and Sevastopol in the West. That is why the Russians didn't let us win in North Korea. That is why they arrest people like Vogeler and strayed American airmen and soldiers who are caught between Kronstadt and Sevastopol.

I am, of course, not an authority on Russian psychology but I think that is what they are thinking and doing. I ask myself "If I were a Russian," perish the thought, "is that how I would think and act?" Would I think I was acting defensively if I put bases on my coast to try to keep the way open to the world ocean, which nobody owns? When I do, I invariably conclude that I was acting defensively, and that other nations were trying to bottle me up and pry my defenses loose.

I have shown you, then, what I think must be the USSR's view of the matter. The American viewpoint is, that we must peel away the satellite cushion; that we must clamp pincers on all four Soviet outlets; that putting diplomatic propaganda and the Voice of America into the western end, and an armed undertaking into the eastern is quite proper and should not alarm the USSR. But a look at this geopolitical diagram will suggest a different interpretation.

These shore bases of the USSR would seem to be essentially defensive; when a nation puts naval bases out on islands at the other side of the sea, they are essentially offensive, but it should be noticed that the Soviet Union has never attempted anything of that sort. I am obviously not an authority on naval power, and hence I will let you make the interpretation. But I still think that the moves in question are defensive. Also the satellite plan is essentially defensive.

I think we are dealing with, in the Soviet Union, a terribly scared nation--a nation so psychopathic that I hate to see ourselves getting into the same frame of mind. There are some people who would have us be scared, also. The whole Soviet propaganda and diplomatic program seems to be that of a frightened nation. Also the development of its economy seems to be of a nation which is terribly excited over its weaknesses. The last change in the Soviet national plan aimed toward heavy industry has come out of that same psychosis of fear.

The recent changes in the Kremlin--which I think are just beginning and that a whole series of them will follow, now that Stalin, the demigod, is dead--seem to presage a change in the whole Soviet program, wherein the fellows who have won out are those who believe in the expansion of heavy industry. They are going to make steel; they are going to make guns and things that are convertible into war goods with a rather bare potential of plastics, shoes, new dresses, and furs. Consumer goods are temporarily out, which again, results from a psychosis of fear. This could be dangerous, as you very well know, because our whole military and diplomatic behavior is not defensive at all in the Russians' eyes, a circumstance which is causing part of the present trouble, I think.

Now, I want to look at this in a somewhat larger way. I have a map here, hanging below my geopolitical diagram, which is based upon a map made by a Scottish peer of the British realm in 1905, Sir Halford Mackinder. As a young student at the University of Chicago I was made to read his book. I was rather excited by it. I was a student on a veteran's scholarship after the First World War and this looked like something that had military and power implications.

Notice that the yellow part of the world includes most of the interior parts of the continents of Europe and Asia. Mackinder named it the "heartland" of the world. Many of you have seen a map showing this many times, I am sure. Around this heartland or interior continental land mass is a zone colored green on my map which we call the border of the heartland, the "rimland." All the remaining outlying parts of the world are called the "fringelands," where the United States is located. The British Empire and Commonwealth mostly lies outside also in the fringelands.

There are advantages in occupying a world heartland position, and there are disadvantages. Said Mackinder, "Whoever should consolidate the heartland, militarily speaking, could eventually rule the world." We didn't pay any attention to that idea, but the Germans did. The latter proceeded to invade the western end of the heartland, while their allies, the Japanese, invaded the eastern end. The operation went pretty much according to schedule.

On my map of Eurasia, the area conquered or immobilized by the Germans is colored green; the part conquered by Japan at the other end of Eurasia is also colored green; the red arrows indicate the closing pincers around the heartland. Had that objective been accomplished,

Russia and the China inside those closing military pincers would have been strangled and slowly subdued, and then the heartland would have been consolidated by the Japanese and the Germans. These last would have built great industries in the heartland as the Russians are now doing, and would have driven the naval power of Britain and America away from the rimland. What they could have done from then on is anybody's guess.

They came very close to accomplishing this blueprint for world conquest. You will notice that the gap between the Japanese and the German jaws of the pincers was a very narrow one, and that only India and the neutral Moslem countries shown in yellow remained to be overrun and most of them had no military power at all.

What held them up was that a major mistake was made. The German attack was split in two, and no attack is as good when one is doing two things at once as it is when one is doing only one thing. The great battleline shown in red on the map, stretching from Arkhangelsk to Leningrad, to Moscow, to Voronezh to Stalingrad, and on to Pyatigorsk was the greatest battleline the world has ever seen, was intended to be a holding line. The German advance into Asia was to take place at the southern end, but the Germans were held up at Stalingrad and in the north Caucasus because they did not put all their energy into it.

Part of their energy went to North Africa. North Africa strategically is part of Europe. It is separated from the rest of Africa by the Great Desert. The Germans were stopped at El Alamein. Had they finished up in North Africa before they attacked Russia, the outcome might have been greatly different. Very probably they would have rolled right through the Near East and met the Japanese end of the pincers at the gates of India. After that, the Russians might have been broken up at the great holding line while the Japanese battled to a finish in China. This shows that Europe was saved by the German defeat in Africa.

The strategic value of Africa was overlooked completely, I think, by Mackinder, and it has probably been overlooked by a good many strategists since then.

I want to say that the world's biggest land mass is actually three continents in two--Eurasia and Africa, with Africa being semidetached. Africa is essentially a big peninsula on the world heartland, but it is also something else that you hear very little about, that is, it is potentially a military staging ground, a scaffold erected by nature adjacent

to the main theater of activity. Anyone who wishes to control the main theater had better make use of this great platform or staging ground, and yet I can see little if any evidence of that in our thinking.

The United States found that it was necessary, of course, in order to win the Second World War that a European invasion be made through Africa. Even our supply line went from the United States to Dakar, in Africa, to Lagos, to Fort Lamy, and up to the frontline behind El Alamein. Likewise, the supply line into China at the other end led into Burma, over the "roof of the world" into Kunming and the Yangtze Valley. The supply line to the USSR went by land over the mountains to the Caspian Sea. In other words the Japanese didn't have the power to drive us away from the rimland of Eurasia.

But in Europe we could not do our staging from any part of the rimlands, Norway was no use; France was no use; Greece was no use-- invariably the Germans drove us off.

If Africa proved to be essential in winning the Second World War, it is going to be even more important in winning the third world war. (I don't think there is anybody in this room who thinks there won't be a third world war. We have already had World War 2-1/2 and lost that. The third is coming up, and that we dare not lose.)

My father taught me as a kid, "Never get into a fight if you can run, but if you do get into a fight, never fight unless you intend to win, and don't be worried about how you win; never enter a fight just to come to a draw."

The situation in Formosa so far is a draw; Korea was a draw. If the Red leaders think it is perfectly safe to push us around, that is what they will do. You let a bully slam you around a few times and he doesn't know that you have let him do it. Instead he thinks he did it because he is the stronger.

The third world war is coming up. We are already preparing to fight. NATO is a step toward organizing a group of allies to hold the Russians in western Europe. I think that is a little dangerous and I will tell you why if you will look with me at the map of Europe. The Turks stand athwart the easiest outlet from the USSR, and I think they know the danger. They have lived next to it for centuries. The Germans, partly because they are also adjacent to it, partly because they were subjected to a full generation of anti-Russian propaganda under

the Nazis, are also aware of their danger. When you get west of that, though, the British are not military; they are naval, and of course we can count on the RAF. But France, Belgium, Spain, Portugal, Italy, and Greece cannot be counted on to fight a holding action to give us the necessary time to convert to war. They will fight nobody. France can't even make up its mind about a government, let alone a war. Any nation that has had 21 governments in 10 years isn't likely to have an army. Many people believe that France is not going to fight.

We will probably fight this coming war almost alone; we can win it too, but only if we don't disarm ourselves by thinking we are going to have allies in France. France didn't even fight in the Second World War, and that was not because of the Communists either; they are not that powerful.

Italy is somewhat different. Italians went to the polls with the threat of mass excommunication from their church, and voted for the Communist leader, Togliatti. In Spain Dictator Franco has been holding the Spanish people down with his Army, and we have backed and financed that army government. No one really believes the Spanish people will fight for us. That is the most pessimistic interpretation one can make, but I think that is the only safe kind to make.

Italy won't fight with us, Spain won't fight; France won't fight for anything; Portugal and Greece are in no condition to fight. The Scandinavian countries are nonmilitary; the Swiss are nonmilitary. I think we can count, in fighting this war, on having the West Germans with us. The Germans are fighters. I think we can count on the Turks fighting for us also, but Turkey is not very big and it is nonindustrial. We will doubtless fight this coming war with the help of the Turks and the West Germans. But the latter are even more interested in German unity than in fighting for us.

If that be the case, it leaves us fighting alone. And yet we have put almost all of our military and economic aid money into western Europe. I would like to put much of it somewhere else, some place suggested by this map. On this map I have the USSR and China colored red; the United States, Canada, and Liberia--our de facto African colony, and South Africa, I have colored green, in order to show the lineup. Here is our Arctic line of bases. At its maximum that line cannot be held in any transpolar war very long; it will collapse pretty quickly.

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By that time, with the Russians in the Atlantic and with the industrial power of Britain knocked out, where will we be? Slaughter begins in the United States with long-range guided missiles and bombing from captured bases in western Europe. At that time we will need a staging ground close to the targets in the USSR from which to bomb the enemy. The best place to put it is right in here in the jungles, the rain forests, the broken plateaus, and the savannas of Africa where you can build a camouflage zone and knock out Russian industry. We can put hangars underground, repair factories underground, depots underground, and have them manned largely by African help. But as yet we have not put a penny in this area.

I am disconcerted by the fact that we are putting our money in places we can't hold. Western Europe is inhabited by people like us--at least superficially like us--and therefore we have thought our destiny lay there with them. Geographically, our destiny lies in Africa not Europe.

On my fourth map I have put hypothetical plane factories, blast furnaces, repair stations, and depots in the African stage. Such facilities would let us bomb the Russians from close by. At the same time, the Russians--who in that phase are going to use land power to try to drive us out of the rimland, will have difficulty in getting at us in Africa because they will have to cross 1,000 miles of desert. Everything they do there will be visible to us, and all their operations will be extremely costly. We therefore have a natural defensible staging ground which is open to us and not to the Russians.

All this is an attempt to build a major concept by making use of geographical facts. What I have told you is a whole sequence of ideas, but these ideas are derived facts. Attacking the USSR from Africa in the third world war is going to be the easy way to do it instead of attacking from western Europe. But unhappily I think we as a nation have officially elected the difficult and undependable way.

All this is essentially an adventure into the realm of geographical thinking. I could have applied this same kind of thinking to many other kinds of situations. I could apply it to the whole of the American economy, or to any one of the great industrial, agricultural, or extra-active units of that economy, but I have tried to do it to the simplest and most obvious aspect of our military potential, and, even there, you can see we have not really explored the underlying ideas at all.

We have neglected geographical thinking in American education. We don't even train our young men to do it. The largest geographical libraries in the world are in Moscow, not in Washington. I have never been given any kind of mandate to teach America to think geographical ideas. I do it because it is fun and because it makes interesting enemies and critics. In the United States, geography is the smallest department in most colleges and universities. We don't teach it at all in some colleges. Maybe you will find a course or two, but only in two or three universities is this vital field even considered important. In my own college it certainly is not.

The service academies in the United States teach military and diplomatic history, but there seems to be no time for teaching military and diplomatic geography. As I remarked to the General just before we came to this assembly, I recently visited one service academy and there the students were committing to memory all the cavalry campaigns of Stonewall Jackson even though there has been no horse in the military for many years.

Wendell Willkie once said, "America is educationally trying to resolve the problems of the present and future by looking at the past." There are, however, no precedents for what we are up against in this age. Only one remedy is available, and that is to use American heads filled with American ideas based upon up-to-date geographical thinking. It is my guess, after teaching Americans for 30 years, that they are as capable of learning as Russians, if not 10 percent better. (This last is perhaps chauvinistic thinking, I'll admit.)

The USSR is dispersing its cities; the United States is building cities in bigger concentrations. The USSR has a program and is assessing its resources; the Congress of the United States has abolished the National Resources Planning Board for economy reasons, and is even now contemplating dispensing with the highly valuable Soil Conservation Service. You can see what we are doing intellectually, militarily, and technologically.

A recent poll showed that we graduated 12,000 engineers from our colleges, and that there will be 22,000 engineers graduated in the Soviet Union in 1955. At that rate by 1960 they will have more engineers than we will. Even the advantage of technology may not be with us much longer.

Consequently, what I have tried to do this morning is a mildly adventurous excursion into the realm of ideas. Thank you.

DR. HUNTER: Dr. Renner is now ready for your questions.

QUESTION: I didn't quite understand your implied antipathy to private capital or semiprivate capital for the exploiting of tidelands oil or other public lands. Could you explain your point further?

DR. RENNER: I can't explain any antipathy because I don't have one. I own too much common stock in petroleum companies and I never like to have them pass a dividend. But I do believe any good national defense policy is going to need some pretty definite limits within which private enterprise will be permitted to operate. I think all of us know that, whether we like it or not. Some things have already been limited permanently as a residue result of the New Deal. The Securities and Exchange Commission, for example, is a specific limitation on private enterprise, and a legitimate one. I don't think Civil Defense planning of any overall kind, which is long overdue, can be attained without some definite but not too cramping regulations of private enterprise.

I was accosted by two of my economist friends in the lobby a moment ago and they accused me of not being an economist. I'm not. A long time ago I received a master's degree in economics--which makes me economically literate, but not an economist. And out of my modest economic literacy I do feel that the good old style raids on the public domain of the kind made by Ike Stephenson, Leland Stanford, Harriman, Guggenheim, and scores of others, are long outmoded. That may sound rather peculiar from a 10-generation descendent of American rugged individualists, but despite my background I still am capable of looking honestly at national defense matters in a world which has now become so closely integrated that there is no time for the solution of crucial problems through waste and bungling. I like individualism to an extreme degree, but I don't think we can afford it much longer in the economic realm. I think that is what lies behind my rather severe criticism of the raids on our national forests, national parks, offshore tidelands oil lands, waterpower, and soils.

With respect to this tidelands business, I have been conscious of oil under these lands as long as the oil people have. A friend of mine, an economist named Harold F. Clark, and I jointly wrote an article in the "Saturday Evening Post" more than a decade ago, in which we

pointed out that there was a lot of oil and other resources out on the continental shelf. No sooner had the article been published than the British annexed a muck Antarctic territory, an action which obtained title to vast continental-shelf areas. The United States Department of State, on the contrary, turned down Admiral Byrd's request to annex similar territory for the United States. President Truman however extended the boundaries of the United States itself outward on the continental shelf, and no sooner did he get our national bounds extended outward than private interests organized to make a raid on the new national domain. I don't think that private interests are morally entitled to demand that.

I would like to see Federal oil reserves far more adequate than those we now have. You can always unreserve a thing, but you can't reserve it after it is gone. We have an oil-burning Navy; we are not entirely atomic powered yet. I would like to see large oil reserves for all our Armed Forces. That is what I mean by national planning. If you give it away to Sinclair, to Gulf, to Shell, that is not in the very nature of things, good defense.

I think that the tidelands controversy is simply more of the kind of thinking we have had for a long time. Like most Americans, I grew up in the philosophy of inexhaustible resources, and any proposal to restrict private enterprise was, therefore, considered contrary to the American way of life. I am not, however, convinced that the American way of life is based on an economic laissez faire. That is what I had in mind but I am not sure I had any more than that in mind.

QUESTION: On the question of inventories, we have been told by other speakers that we have a pretty good idea of our reserves of coal, steel, and iron ore, both quality and quantity, in many areas. Yet you flatly state that we have no inventory of our natural resources, except possibly in regard to the board feet of lumber.

DR. RENNER: We don't even know our board feet of lumber. We have some estimates made by the Forest Service and the Bureau of Agricultural Economics. I was once, during the depression, given a job of inventorying timberland for the State of Iowa, which had no inventory of the timber within its own boundaries. Iowa found that it had a lot more of certain kinds of trees than it thought it did, and less than expected in others. That state also found it had much more land available for growing trees than it had known about. If one state thus had no estimate of its timber resources--and timber is one of the easiest things to inventory--think what that means for the country as a whole.

And if you think minerals have been inventoried! --last summer when I was out in Moab, Utah, everybody and his dog were going around with a Geiger counter looking for uranium. They were even looking in the Aztec sandstone formation. I said to one party, "don't bother to look there, it doesn't contain uranium." They replied, "You never can tell." There is obviously no inventory of uranium.

We don't even know how much carnotite we have, or how much of any other uranium ore for that matter. I would seriously question whether we know very much regarding any other resources. I know that runs counter to what we have been told, and I suppose certain industries know how much of certain grades of resources is readily available to them, but that is far from constituting a national inventory of the capital goods of America. Even the Census doesn't give us much information on that.

QUESTION: I was a bit surprised at what I shall call the "write-off" of Great Britain in your analysis of war. I am curious as to your reasons for so thinking.

DR. RENNER: My reasons, I think, are apparent to every Air Force officer in the room: Unless air defenses at close range are more effective than anything that has ever been made public, British air bases and the industries lying behind them are in a terribly vulnerable position. In the first place they have no defense available through scattering. All of Britain can be plumped down inside Oregon. There is thus no place to hide in Britain. The great cities stand out and at night, unless you black them out, they are just one illuminated spot after another on a little green island. The German Luftwaffe was a first-rate air force, but it had a lot of tactical as well as strategic work to do. And Germany is only a third-rate nation in resources. It built a war economy on ersatz primarily. The Germans made an inventory; they stockpiled where inventory was lacking, and ersatz did the rest--all at the hands of a very fine engineering group, the equal of anything we have in this country and ahead of some; they built their air power pretty effectively. But they found it had very great limits, and the amount of strategic bombing and demolition bombing they could do over Britain was decidedly limited. The Russians apparently are building a strategic air force--one long-range to handle us, one short-range to handle the British.

My bet is that the British will hold out as long as anybody could, and I didn't mean to be cavalier, but I am extremely pessimistic about

the effectiveness of British industry, not in terms of the last war or two wars ago, but in terms of a third world war. You have seen figures on what a small atomic bomb can do to an industrial district. You can't keep an air force in the air very long when industries are being burned out.

I would rather stop right here and say that the Germans and the Turks will fight on the ground and we will have to carry the rest. The British Navy will retire and fight alongside us, but I am not sure what atomic bomb contamination will do to a capital ship. I think it is not the cushion we think it is.

One of my students was a demolition expert for the United States Army and he gave me some figures that suggest that capital ships are not going to have a very happy time of it in the next war. It may even be that a near miss is worse than a hit. Literally I mean that. So the British Navy may or may not be a great bulwark to us even though we can count on it. But I don't count on an Army from Britain.

So my conclusion is that you can't count on industrial districts which are concentrated and close to the source of really heavy and determined bombing. I think you had better write them off. And, in order to be on the safe side, I will give you a leeway of 10 percent on a 90-percent writeoff.

QUESTION: I can see this possible writeoff of the British, but how about the Germans? Are they not in the same position?

DR. RENNER: Their air power is in the same position, and they will have no sea power (we effectively destroyed that in the last war, and it will not be revived--at least within foreseeable times in quantities that can be effective). I believe we can count on their military power, but my thesis there was, since the mountain ranges in Europe--and this is worth checking--the Pyrenees, the Alps, the Carpathians, the Apennines, all run east and west, so that the North German Plain, the Polish Plain, the Moravian Gate, and the Bavarian Plateau, the Belfort Saddle, the Aar Basin, the Paris Basin, and the Gate of Lorraine are all channels leading east and west. There isn't a single major landform barrier between the Russians and the Atlantic.

The Russians are training their engineer corps on river crossings. They have a lot of rivers--the Volga, the Dneper, the Dnestr, the Vistula--and they won't make the same bungle that some of the rest

of us have made, for example, in the crossing of the Rhine during the Second World War. Some of them were anything but howling successes. There is a technique to crossing rivers--it has to be done quickly and with preplanning. It is a kind of modification of the German technique of Schwerpunkt und Aufrollen getting across fast, spreading out and holding. The Russians, I understand, are specializing in that kind of engineering, which certainly reveals what they are thinking about.

Of course, there is a whole series of these rivers--the Vistula, the Elbe, the Rhine, the Seine, the Meuse, the Moselle, all of them running north and south, whereas the mountain ranges run east and west, forming grooves for Russian invasion instead of barriers like the rivers.

I am a little frightened at our complacency. We visualize the Germans holding the first line, the British, Spanish, and French holding the second line, with ourselves getting there to hold the third line. We didn't have much success at that under attack by the Germans; we will have less success under attack by the Russians.

But the Russian satellites constitute what Colonel John Kieffer calls "cushion space" for the USSR--in effect an absorption zone. Kieffer showed me an interesting document not long ago setting forth his power-zone theory. You may or may not agree with it. Maybe it hasn't been released yet, but on the other hand many of you may have examined John Kieffer's power-zone theory.

The USSR, Mongolia, and China, in manpower terms, can put 25 million men in the field. The Russians had 10 to 12 million in the last war, without much heavy industry behind them. Now that they are concentrating on heavy industry, I feel they might throw 10 million in the first surge, which means that western Europe will be snowed under.

We saw a little test of that sort of thing in North Korea--a great human wave and with only half of the equipment they needed was hurled at us. If the Soviets should put good air power and high fire power behind their attack, together with a good service of supply--none of which the North Koreans had--and then throw in 5, 8, or 10 million men in rapid waves into their river crossings, without a mountain range to negotiate. I am not going to bet on anybody in western Europe.

I am looking about therefore--not to abandon western Europe, because I have never advocated that--to see if we can put some of our

chips elsewhere. Then it is that I see the geographical logic of putting some of our eggs into the African basket where the Russians in order to get to us will have to go through the Middle East, and when they get through the Middle East, there still will be 1,000 miles of the Sahara Desert, which is pretty tough going. I have spent much time in the Gila Desert of the United States, and I have a great deal of respect for the handful of desert warfare experts which Field Marshal Rommel had in Africa. Their esprit de corps and savoir-faire was really superb.

The Russians can't get through that kind of zone and still have enough left to push us out of central Africa. We can camouflage and we can hide in the forests, savannas, and mesas. We can hide our installations in this country in a very easy manner.

Moreover, the Africans have no antipathy toward us. They don't have any public opinion as such. They are no stone-age savages; they are of the iron age of culture, and can learn modern industrial techniques easily.

I have been depressed at the extent to which we have neglected Africa. Every time anything comes up on Africa in the United Nations, we abstain from voting rather than offend the European colonial powers. That attitude, I think, is largely the reason why we haven't done much strategic thinking about Africa, except for a strip in the north that has been colonized by Europeans. We have always underestimated the economically retarded people.

QUESTION: You said earlier that the Russians seem psychologically, strategically, and otherwise like people scared to death. Yet, from the latter part of your discussion, it seems they are not a bit scared. Who are they scared of, and are they really scared?

DR. RENNER: I'm not certain what part of that is question and what is statement.

I still think they are scared. If we go back and examine my geopolitical diagram, I think you will see the reason why they are scared. The vulnerable parts of the ellipse are the two ends, and what we have been doing these past few years has been aimed at destroying the defensibility of those two end zones of the USSR. The Soviets act like people who are afraid of what is about to be done to them.

But don't underestimate a fellow who is scared. When I was a young fellow, I used to go into the ring a good deal; but the only time

I won a fight was when I was scared half to death. I won't go into the details of how badly scared I was, but if that works on an individual, it will work on a nation. If a nation's people are scared enough, they may do the one thing they don't want to do and that we don't want either. That doesn't necessarily mean they will do anything foolish, however. There was never yet a war where two peoples didn't look at the same area and both think they could win.

The great geographer, Dr. Ewald Banse, says that the foreign policy of a nation lies in its geography. And I might say that Banse is now a resident of Moscow, not of Washington. Our occupying force didn't get him. Maybe it's just as well it didn't, because I am told that under the occupation Haushofer was arrested so many times by various American authorities that he killed himself out of frustration. In this fashion we failed to get a lot of other good German brains--and don't forget that brains are brains no matter who has them--the result being that a lot of engineers, geographers, and others fell to Russia.

The captured German scientists, however, didn't teach the Russians all that the latter know; Russian scientists also are skilled. Science is international, and all scientists, no matter where they are, think alike. Therefore, if you want to know what a Russian scientist is thinking, ask an American scientist. He will reason by analogy what the Russians are probably thinking, and not be far off in his conclusions.

That is why I think Russian strategists are looking intelligently at geopolitical space. I have accordingly tried to substitute myself for a hypothetical Russian--difficult as that would be--in order to see what he is thinking. I came up with the idea that the Russians are badly frightened and for the following reason: When they see an American businessman taking a declaredly harmless vacation between the Soviet naval bases of Kronstadt and Sevastopol, they arrest him and call him a spy. After several years, they return him brain-washed to a point where he believes he is a spy, if he wasn't in the first place. All of that points to the conclusion that I drew.

But to get back to what the Russians are going to do, I don't know, except that the more scared they are, the more gigantic the effort they are going to make. Your question implied that if they were scared, they would bog down in futility. Certain kinds of fright does bog people down in futility, but I don't think this is that type. It turns in a direction

inimical to us. If our economy can produce more steel than the Russians, don't make the mistake of thinking that necessarily gives us a military advantage, because consumption goals are not the same in their economy. Incidentally, we have about the same pig iron capacity as Russia plus its satellites. So in many of these basic things, we don't have any real advantage.

DR. HUNTER: Dr. Renner, first, I would like to correct my opening comment, and then I would like to make a further comment. The correction is: You are not frightened of your subject at all. The further comment is: You have completely broken with the party line and in so doing you have given us quite a shaking up, and a shaking up is good in any man's education.

Thank you very much.