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WHY GEOGRAPHY MATTERS . . . MORE THAN EVER!

KNOWLEDGE, AS THE FATES OF HUMAN SOCIETIES HAVE DEMONstrated countless times, is power. Whether such knowledge involves an understanding of the seasonal cycles of natural irrigation or the capacity to find and exploit hidden energy reserves, or entails inventions ranging from agricultural tools to sophisticated weapons, it has spelled advantage in an ever-more competitive world.

Not only is our world ever more competitive: it is also changing at an ever-faster pace. National as well as local governments must make decisions in short order as global and regional challenges arise at breakneck speed. In mid-December 2010, an incident in a market in Tunisia catapulted a seemingly stable member of the Arab League into a full-scale revolution that toppled its government in less than one month, starting a sequence of events in other countries that soon became known as the "Arab Spring." Six months later, this Internet-propelled movement had spread from Morocco in the west to Bahrain in the east, and a civil war was in progress in Libya and looming in Syria. Non-Arab states suddenly found themselves having to take sides; in the case of Libya, the issues ranged from the level of support for anti-government rebels (weapons? money?) to military involvement (ground troops? bombings?). Such decisions must be based on available knowledge of conditions not only in Libya but also in other countries affected by the "Arab Spring," and these conditions comprise a host of circumstances: cultural, political, economic, environmental. Certainly there are specialists and experts in these outsider countries who can advise members of the American and

European (and other) administrations on local circumstances, but in the end the decisions are made by elected representatives in government. And then the question becomes: how well informed are *they*?

The answer is not encouraging. Listen to the commentaries by members of the United States Congress on those Sunday-morning television talk shows, and you often cringe at what you hear. True, our representatives have to deal with many and diverse issues, but it's obvious that, when it comes to the wider world, their knowledge is often fragmentary.

Given the accelerating pace of change on our increasingly crowded planet, this may not be surprising—even if it is disturbing. Just consider crucial events in the first decade-plus of the twenty-first century: intense climate change accompanied by significant weather extremes; deadly tsunamis caused by submarine earthquakes; unprecedented terrorist attacks in the United States, Europe and elsewhere; costly wars in Iraq and Afghanistan; a terrible, mostly overlooked conflict in Equatorial Africa costing millions—yes, millions—of lives; an economic crisis threatening the stability of the international system even as it throws the United States into recession. Add to this the burgeoning presence of China on the international stage and the growing role of India, the specter of troubling disarray in the European Union, and concern over nuclear ambitions in North Korea and Iran, and it is obvious that the wider world presents daunting challenges for decision makers.

All this is happening right after one of the most tumultuous periods in world history, witnessing the collapse of the Soviet Union and Yugoslavia and their combined disintegration into some two dozen new states, the momentous transition to democracy in South Africa, the emergence of NAFTA, and the waging of what became known as the Gulf War. Time and again, during those last two decades of the twentieth century, the map of the world changed drastically, to the point that the makers of expensive and bulky globes mostly gave up. And it isn't over, although in terms of state disintegration, the pace of change has at least slowed down. South Sudan in 2011 became the newest officially recognized state on the map, the 193rd member of the United Nations, and in many ways the poorest. All members of the international community acknowledged South Sudan's independence, unlike Kosovo (in Europe, the latest fragment of the former Yugoslavia to seek sovereignty, is recognized by many but not all).

Is there a conceptual framework that can accommodate all these changes, that would help us understand the transformations and inter-

connections, inform our thoughts and decisions through a particular, comprehensive perspective? This book answers these questions with one affirmation: geography.

In truth, geography itself has gone through several transformations in recent times. When I was a high-school student, learning to name countries and cities, ranges and rivers, was an end in itself. Making the connections that give geography its special place among the sciences was not on the agenda. By the time I got to college, geography (in Europe and America at least) had become more scientific, even mathematical. During my teaching career it became more technological, and not for nothing does the now-common acronym GIS stand for Geographic Information Systems. Today geography has numerous dimensions, but it remains a great way to comprehend our complex world.

BECOMING A GEOGRAPHER

Not long ago I read an interview with a prominent geographer in the newsletter of this country's largest professional geographic organization. The editor asked Frederick E. (Fritz) Nelson, now teaching at the University of Delaware, a question all of us geographers hear often: what caused you to join our ranks? His answer is one given by many a colleague: while an undergraduate at Northern Michigan University he took a course in regional geography and liked it so much that he decided to pursue a major in the discipline. He changed directions while a graduate student at Michigan State University, but he did not forget what attracted him to geography originally. Today his research on the geography of periglacial (ice-margin) phenomena is world renowned (Solis, 2004).

My own encounter with geography stems from my very first experience with it in Holland during the Second World War, not at school, but at home. With my dad I watched in horror from a roof window in our suburban house when my city, Rotterdam, was engulfed by flames following the nazi fire-bombing of May 14, 1940 (long-buried feelings that resurfaced on September 11, 2001), and soon my parents abandoned the city for a small village near the center of the country. There they engaged in a daily battle for survival, and I spent much time in their library, which included several world and national atlases, a large globe, and the books of a geographer named Hendrik Willem van Loon. As the winters grew colder and our situation deteriorated, those books gave me

hope. Van Loon described worlds far away, where it was warm, where skies were blue and palm trees swayed in soft breezes, and where food could be plucked from trees. There were exciting descriptions of active volcanoes and of tropical storms, of maritime journeys to remote islands, of great, bustling cities, of powerful kingdoms and unfamiliar customs. I traced van Loon's journeys on atlas maps and dreamed of the day when I would see his worlds for myself. Van Loon's geographies gave me, almost literally, a lease on life.

After the end of the war, my fortunes changed in more than one way. When the schools opened again, my geography teacher was an inspiring taskmaster who made sure that we, a classroom full of youngsters with a wartime gap in our early education, learned that while geography could widen our horizons, it also required some rigorous studying. The rewards, he rightly predicted, were immeasurable.

If, therefore, I write of geography with enthusiasm and in the belief that it can make life easier and more meaningful in this complex and changing world, it is because of a lifetime of discovery and fascination.

WHAT IS GEOGRAPHY?

As a geographer, I've often envied my colleagues in such fields as history, geology, and biology. It must be wonderful to work in a discipline so well defined by its name and so accurately perceived by the general public. Actually, the public's perception may not be so accurate, but people *think* they know what historians, geologists, and biologists do.

We geographers are used to it. Sit down next to someone in an airplane or in a waiting room somewhere, get involved in a conversation, and that someone is bound to ask: Geography? You're a geographer? What is geography, anyway?

In truth, we geographers don't have a single, snappy answer. A couple of millennia ago, geography essentially was about discovery. A Greek philosopher named Eratosthenes moved geographic knowledge forward by leaps and bounds; by measuring Sun angles, he not only concluded that the Earth was round but came amazingly close to the correct figure for its circumference. Several centuries later, geography was propelled by exploration and cartography, a period that came to a close, more or less, with the adventures and monumental writings of Alexander von Humboldt, the German naturalist-geographer. A few decades ago, geography still was an organizing, descriptive discipline whose

students were expected to know far more capes and bays than were really necessary. Today geography is in a new technological age, with satellites transmitting information to computers whose maps are used for analysis and decision making.

Despite these new developments, however, geography does have some traditions. The first, and in many ways the most important, is that geography deals with the natural as well as the human world. It is, therefore, not just a "social" science. Geographers do research on glaciations and coastlines, on desert dunes and limestone caves, on weather and climate, even on plants and animals. We also study human activities, from city planning to boundary making, from winegrowing to churchgoing. To me, that's the best part of geography: there's almost nothing in this wide, wonderful world of ours that can't be studied geographically.

This means, of course, that geographers are especially well placed to assess the complicated relationships between human societies and natural environments; this is geography's second tradition. In this arena knowledge is fast growing, and if you want to see evidence of the insights geography can contribute I know of no better book than Jean Grove's spellbinding analysis of what happened when Europe and much of the rest of the world were plunged into what she calls *The Little Ice Age*, starting around 1300 and continuing, with a few letups, until the early 1800s (Grove, 2004). This is a global, sweeping analysis; other geographers work at different levels of scale. Some of my colleagues study and predict people's reactions to environmental hazards: Why do people persist in living on the slopes of active volcanoes and in the floodplains of flood-prone rivers? How much do home buyers in California know about the earthquake risk at the location of their purchase and what are they told by real-estate agents before they buy? Another environment-related issue involves health and disease. The origins and spread of many diseases have much to do with climate, vegetation, and fauna as well as cultural traditions and habits. A small but productive cadre of medical geographers is at work researching and predicting outbreaks and dispersals of maladies ranging from cholera to AIDS to bird flu. Peter Gould's book on AIDS, which he called *The Slow Plague*, effectively displays the toolbox of geographers when it comes to such analyses (Gould, 1993).

A third geographic tradition is simply this: we do research in, and try to understand, foreign cultures and distant regions. A few decades ago,

it was rare to find a geographer who did not have some considerable expertise in a foreign area, large or small. Most spoke one or more foreign languages (this used to be a requirement for graduation with a doctorate), kept up with the scholarly literature as well as the popular press in their chosen region, and conducted repeated research there. That tradition has faded somewhat in the new age of the Internet, satellite data, and computer cartography, but many students still are first attracted to geography because it aroused their curiosity about some foreign place. The decline in interest in international affairs is not unique to geography, of course. From analyses of network news content to studies of foreign-area specialization in United States intelligence operations, our isolationism and parochialism are evident. But there will be a rebound, probably of necessity more than desire. Geographic provincialism entails serious national security risks.

A fourth tradition geographers like to identify is the so-called location tradition, which is essentially a human-geographic (not a physical-geographic) convention. Why are activities, such as movie industries or shopping centers, or towns or cities such as Sarasota, Florida, or Tokyo, Japan located where they are? What does their location imply for their prospects? Why did one city thrive and grow while a nearby settlement dwindled and failed? Often a geographic answer illuminates historic events. Urban and regional planning is now a key component to many college geography curricula, and many of our graduates find positions in the planning field.

It is true that these traditional geographies have helped unite as well as divide geography and geographers. If they form a unifying element, geography's broad umbrella can also lead to separation. It's a long stretch from glacial landforms to urban structure, from soil distribution to economic models, and specialization has a way of eroding the common ground.

But take heart: the technological revolution propelled by the Internet has ushered in a new era in geographic research and analysis. In Chapter 2, we look at the changing role of maps and cartography in geographic education, investigation, interpretation, and demonstration, and the acronym GIS—Geographic Information Systems—the technology that has not only revolutionized geographic inquiry but has coalesced the discipline as never before. Correlations involving distributions of apparently disparate phenomena, that in pre-GIS times would have taken months to achieve, can now be accomplished in minutes. The urban spe-

cialist who might never have thought of glacial landforms beneath city streets can now see them for herself, the latest information the click of a mouse away. In the process, we learn what our colleagues in other fields are doing, thus gaining knowledge about new directions in geography, wherever these may be leading.

LOOKING AT THE WORLD SPATIALLY

If there is one word that telegraphs the thinking that underpins geography's traditions, methods, and technologies, that word would derive from space—not celestial space, but Earthly space. We geographers look at the world *spatially*. I sometimes try this concept on a questioner: historians look at the world temporally or chronologically; economists and political scientists come at it structurally, but we geographers look at it spatially. With a little luck my interrogator will furrow a brow, nod understandingly, and take out his or her *USA Today* and read about the results of the latest geographic literacy test.

Geographers, of course, are not the only scholars to use spatial analysis to explain the workings of our world. Economists, anthropologists, and other social scientists sometimes take a spatial perspective as well although, as their writings suggest, they often lag behind. Geographers were amused (a few were annoyed) when the noted economist Paul Krugman began writing his columns in the *New York Times* and rediscovered spatial truisms that had long since been superseded in the geographic literature (Berry, 1999). The physiologist Jared Diamond's magisterial book *Guns, Germs, and Steel* was described by *New York Times* journalist John N. Wilford as "the best book on geography in recent years," but geographers noted some significant conceptual weaknesses in it (Diamond, 1997). Mr. Diamond not only took note of these caveats, but acted impressively on them: he joined the faculty of the Department of Geography at UCLA and wrote a successor volume that demonstrates his perception of geographic factors in the disintegration of once-thriving societies (Diamond, 2005).

Diamond, in both of these Herculean works, raised sensitive issues that once lay at the core of geographic research: the role of natural environments in the fate of human societies. Early in the twentieth century, this research led to generalizations attributing the "energy" of midlatitude societies and the "lethargy" of tropical peoples to climate. Such simplistic analyses were not only bound to be flawed, but could be used to

give credence to racist interpretations of the state of the world, discrediting the whole enterprise. But the fundamental question, as Diamond asserted, has not gone away. Today we know a great deal more about environmental swings and associated ecological transitions as well as human dispersal and behavior, and the issue is getting renewed attention.

Nevertheless, it remains tempting to assign a simple causal relationship to a complex set of circumstances because a map suggests it. Consider the following quote from a lecture presented at the United States Naval War College by another noted economist, Jeffrey Sachs: "Virtually all of the rich countries of the world are outside the tropics, and virtually all of the poor countries are within them . . . climate, then, accounts for quite a significant proportion of the cross-national and cross-regional disparities of world income" (Sachs, 2000). That would seem to be a reasonable conclusion, but the condition of many of the world's poor countries results from a far more complex combination of circumstances including subjugation, colonialism, exploitation, and suppression that put them at a disadvantage that will long endure and for which climate may not be the significant causative factor Mr. Sachs implies. In any case, while it is true that many of the world's poor countries lie in tropical environs, many others, from Albania to Turkmenistan and from Moldova to North Korea, do not. The geographic message does not lend itself to environmental generalizations.

Of course we should be pleased that nongeographers are jumping on our bandwagon, but this does not make our effort to come up with a generally accepted definition of our discipline any easier. In some ways, I suppose, this very difficulty is one of geography's strengths. Geography is a discipline of diversity, under whose "spatial" umbrella we study and analyze processes, systems, behaviors, and countless other phenomena that have spatial expression. It is this tie that binds geographers, this interest in patterns, distributions, diffusions, circulations, interactions, juxtapositions—the ways in which the physical and human worlds are laid out, interconnect, and interact. Yes, it is true that some tropical environs are tough on farmers and engender diseases. Tougher still, though, are the rich world's tariff barriers against the produce of tropical-country farmers and the subsidies paid to large agribusiness. End those practices, and suddenly climate won't seem so "significant" a factor in the global distribution of poverty.

So geography's umbrella is large, allowing geographers to pursue widely varying research. These days that includes a lot of social activism

and other work that might seem closer to sociology than to geography, but much geographic research remains spatial and substantive. I have colleagues whose work focuses on Amazonian deforestation, West African desertification, Asian economic integration, Indonesian transmigration. Others take a more specific look at such American phenomena as professional football and the sources and team destinations of players, the changing patterns of church membership and evangelism, the rise of the wine industry in this period of global warming, and the impact of NAFTA on manufacturing employment in the Midwest. I'm always fascinated to read in our professional journals what they're discovering, and as I used to tell my students, the Age of Discovery may be over, but the era of geographic discovery never will be.

THE SPATIAL SPECIALIZERS

The stirring story of geography's early emergence, its Greek and Roman expansion, its European diversification, and its global dissemination is a saga of pioneering observation, heroic exploration, inventive mapmaking, and ever-improving interpretation, discussed in fascinating detail by the discipline's leading historian (Martin, 2005). Long before European colonialism launched the first wave of what today we call globalization, indigenous geographers were drawing maps and interpreting landscapes from Korea to the Andes and from India to Morocco. Later, geographic philosophy got caught up in European nationalism, and various "schools" of geography—German, French, British—came to reflect, and even to support and justify, national political and strategic aspirations including expansionism, colonialism, and even naziism. In the United States, geography also generated specialized schools of thought, but the issues that defined (and divided) them tended to be scholarly rather than political. The most prominent of these American schools was based for many years at the University of California–Berkeley, and was dominated by the powerful personality of the cultural geographer Carl Sauer. The core idea of this school was the notion that a society's lifeways would be imprinted on the Earth as a *cultural landscape* that could be subjected to spatial analysis wherever it was found.

Geographers not only take a wide view, but also a long view. We try not to lose sight of the forest for the trees, and put what we discover in temporal as well as spatial perspective. "Geography is synthesis," is one fairly effective answer to that question about just what geography

is. That is, geographers try to find ways to link apparently disparate information to solve unanswered problems. As you will see later, sometimes such daring generalizations can set research off in very fruitful directions.

These days, though, it takes courage to generalize and hypothesize. This, as we all know, is the age of specialization. But specialized research ought to have some link to the big questions that confront us, or you have reason to question its value. Fifty years ago one of my professors at Northwestern University often urged me and my co-students to practice what he called "intelligent dinner conversation" (a quaint cultural tradition, remnants of which are still observable in certain urban settings). "Always be ready to explain in ordinary language to the guest across the table what it is you do and why it matters," he said. Most of us thought that this was not only unnecessary, but also none of "the public's" business. But he was right, and he would enjoy the debate now going on in professional geography, much of which focuses on ways to speak to the general public in plain language about what it is we do.

Specialization in research and teaching occurs at several levels, of course. I have already mentioned that some geographers (fewer than before) still become area specialists or, in another context, regional scientists. Others study urbanization from various spatial standpoints, and their studies range from highly analytical research on land values and rents to speculative assessments of intercity competition. One especially interesting question has to do with efforts to measure the amount of interaction between cities. When two large cities lie fairly close together, say Baltimore and Philadelphia, there will be more interaction (in numerous spheres ranging from telephone calls to road traffic) than when two cities lie much farther apart, for example Denver and Minneapolis. But just how does this level of interaction vary with city size and intercity distance? The answer is embodied by the so-called gravity model, which holds that interaction can be represented by a simple formula: multiply the two urban populations and divide the total by the square of the distance between them. You can use kilometers, miles, or even some other measure of distance, but so long as you are consistent for comparative purposes the model will do a good job of predicting reality. Distance is a powerful deterrent to interaction—geographers call this distance decay—and measuring this factor can be enormously helpful in business and commercial decision making.

Other geographers combine economics and geography, and focus on spatial aspects of economic activities. The rise of the world's new economic giants on the Pacific Rim has kept them busy.

Still others focus on spatial aspects of political behavior. Political scientists tend to focus on institutions, political geographers on political mosaics. Geopolitics, an early subfield of political geography, was hijacked by nazi ideologues and lost its reputation; but recently, geopolitics has been making a comeback as an arena of serious and objective research. From power relationships to boundary studies, political geography is a fascinating field.

There are literally dozens of fields of specialization in geography, and for students contemplating a career in geography it's a little bit like being in a candy store. Interested in anthropology? Try cultural geography! Biology? There's biogeography! Geology? Don't forget geomorphology, the study of the evolution of landscape. Historical geography is an obviously fruitful alliance between related disciplines. The list of such options is long, and it is still growing. Developments in mapmaking have opened whole new horizons for technically inclined geographers.

Over a lifetime of geographic endeavor, many geographers change specialties, and I'm one of them. I was educated to be a physical geographer, that is, as someone who specializes in landscape study (geomorphology) and related fields. As such, I spent a year in the field in Swaziland, in southern Africa, trying to determine whether a large, wide valley there was a part of the great African Rift Valley system, the likely geographic source of humanity. While I was preparing for this research, however, I met a political geographer named Arthur Moodie, a British scholar who came to Northwestern University as a visiting professor. I took his classes and never forgot them. When I was hired by Michigan State University as a physical geographer, I also continued to read and study political geography. Eventually, I was asked to teach a course in that field, wrote a book and some articles about it, and thus developed a second specialization.

What I didn't realize, at first, was how my background in physical geography would make me a better political geographer. Like geopolitics, environmental determinism had acquired a bad name between the World Wars, and it could be dangerous, professionally, to try to explain political or other social developments as influenced by environmental circumstances. But I knew that, like geopolitics, environmental studies

would make a comeback. When they did, I had the background to participate in the debate. That's how, many years later, I was appointed to Georgetown University to teach environmental issues in the School of Foreign Service.

I made only one other foray into a new field, and that was also as pleasant a geographic experience as I've ever had. It all began with a great bottle of wine. A fateful dinner with that bottle of 1955 Chateau Beychevelle so aroused my curiosity that, five years later, I was working on my book entitled *Wine: A Geographic Appreciation*, was teaching a course called The Geography of Wine at the University of Miami, and saw some of my students enter the wine business armed with a background they often found to be very advantageous. Geography has few limits—and specialization does have its merits.

BUT IS GEOGRAPHY IMPORTANT?

Remember the bumper sticker, popular some years ago, that said "If You Can Read This, Thank a Teacher"? One day I was driving down one of my least favorite highways, Interstate 95 between Fort Lauderdale and Miami in Florida, when a car passed me whose owner had modified that sticker by inserting the word "Map" after "This" and by pasting a piece of road map at the end of the slogan. I didn't need to ask what that owner's profession was. A geography teacher, obviously.

The fact is, a lot of us cannot read maps. Surveys show that huge numbers of otherwise educated people don't know how to use a map effectively. Even simple road maps are beyond many more of us than you might imagine. People who, you would think, deal with maps all the time and therefore know how to get the most out of them—travel professionals—often have trouble with maps. I live about half the year on Cape Cod, and thus have the dubious pleasure of flying into and out of Boston's Logan Airport, about two hours from home. These days flight schedules are not what they used to be, so when someone arranges my trip I always hope that consideration was given to the other airport about two hours from the mid-Cape, Providence. I've learned not to count on it.

Anomalously, the now-widespread availability of GPS (Global Positioning Systems) equipment, hand-held and built into automobile dashboards, seems to be having an unexpectedly negative effect on orientation and awareness. A recent, and as-yet-anecdotal, press report commented

on the arrival of visitors to New York City emerging from the stairways of the subway system. Those without GPS tended to look up, recognize Manhattan landmarks, check on street signs and make their way. Those looking at their GPS followed their on-screen directions, heads down, apparently unaware of their urban setting and its features. As to those GPS systems in cars, they certainly get you from point to point, even if they do not do much for in-car conversation about what's being seen. And if you decide to visit Cape Cod, may I suggest you turn it off in favor of a colorful local map? Whoever inserted the least scenic, most crowded route to my corner of the Cape obviously had no geographic awareness.

Geography's utility certainly made news shortly after the terrible tsunami of December 26, 2004, when the story of a schoolgirl named Tilly Smith made headlines around the world. Tilly was vacationing in Phuket, Thailand with her parents and was on Maikhao Beach when she saw the water suddenly recede into the distance. She remembered what she had just been taught by her geography teacher, Mr. Andrew Kearney at Danes Hill Prep School in Oxshott, south of London: that the deep wave of a tsunami sucks the water off the beach before it returns in a massive wall that inundates the entire shoreline. Tilly alerted her parents and they ran back and forth, warning beachgoers of the danger and urging them to seek shelter on an upper floor of the hotel nearby. About 100 people followed her advice; all survived. Of those who stayed behind, none did. Britain's tabloids declared Tilly to be "The Angel of Phuket," but give some credit to that geography teacher who obviously had the attention of his students.

Okay, you might say. As an everyday tool to make life a bit more predictable and efficient, and as an occasional environmental alert, geography has its uses. But does that make it important in a general sense?

Consider this: a general public not exposed to a good grounding in geography can be easily confused, even misled, as they follow the sometimes contradictory results of ongoing scientific research. Even today, despite the best efforts of the National Geographic Society and its allies, an American student might go from kindergarten through graduate school without ever taking a single course in geography—let alone a fairly complete program. (That's not true in any other developed country, nor in most developing ones. Geography's status is quite different in Britain, Germany, France, and such countries as Brazil, Nigeria, and India.) Some of us recall (and certain newspaper columnists remind us of) scientific

studies published in the 1960s that forecast imminent glaciation. Bitter, lengthy winters were driving people who could afford to do so out of the Midwest and other northerly locales towards what came to be known as the "sunbelt." Newspapers carried scientists' dire warnings about ever-shorter summers and even tougher winters for the immediate future. But before the end of the century, a reversal was underway, and the warming phase now in progress entailed forecasts of torrid temperatures, longer summers, rising sea levels and environmental extremes.

There's nothing like early and sustained geographic education to make sense of such apparent contradictions. That cooling phase in the mid-twentieth century had causes that were partly natural—climate change is a permanent feature of our planet—and partly caused by factory emanations whose effect was to reflect the sun's radiation back into space. The warming phase of the present also results from a combination of causes, but now the human factor contributes to heating, not cooling. Not only is the industrial contribution quite different because of changing technologies, but the volume of pollution poured into the atmosphere is far larger: the population explosion and industrial expansion of the past century was just getting underway a half century ago. To get a picture of the reasons behind the apparent contradiction, it helps to understand the workings of nature as well as the growing impact of humanity on our planet—the combination of topics that defines introductory geography and gets students ready for specialization later in their education.

When I talk about this issue on the public-lecture circuit, someone in the audience is likely to challenge my point about the state of geographic knowledge. It may be bad, goes the argument, but don't worry, our leaders know what geography they need to know. They deal with the world at large on a daily basis, and they're sure to be adequately informed and prepared.

Well, maybe, although I wonder about those leaders who come from elite universities that do not offer any geography as part of their undergraduate or graduate curricula. Do you suppose that, if former defense secretary Robert McNamara had been able to take just one course in basic regional or human geography at his alma mater (Harvard), his perspective on Southeast Asia in general and Vietnam in particular might have been different? I would like to think so, but Harvard University has not offered geography to its students for about a half century. The cost to the country may be greater than we can imagine.

WHY GEOGRAPHY MATTERS TO ME . . .

"I [am] convinced that geography is the foundation of all . . . When I begin work on a new area . . . I invariably start with the best geography I can find. This takes precedence over everything else, even history, because I need to ground myself in the fundamentals which have governed and in a sense limited human development . . . If I wanted to make myself indispensable to my society, I would devote eight to ten years to the real mastery of one of the world's major regions. I would learn the languages, the religions, the customs, the value systems, the history, the nationalisms, and above all the geography."

—James Michener in *Social Education,* 1970

"The study of geography has been debated by Americans for many years . . . whether or not it is appropriate for Harvard to teach geography, it is certainly vital knowledge for our citizens and our students. With all [the] deficiencies in our education, it should not be surprising that so many Americans and so many students know so little about geography. Like it or not, the policies, indeed the future, of the U.S. [will] be influenced by many events that happen abroad, and by peoples of other nations, and even by the physical geography of other parts of the world. The world is shrinking, and . . . more and more events impact, or will impact, the United States . . . All of this starts with geography."

—Caspar Weinberger in *Forbes Magazine*, 1989

"During my time as Secretary of State, I witnessed firsthand how important it was that Americans understood geography and the world around them. Since then, as countries have become ever more interconnected, that need has grown."

—James A. Baker III, U.S. Secretary of State (1989–1992), quoted in the AAG *Newsletter*, Vol. 46, No. 10, November, 2011

"Geography played a leading role in nearly every policy decision I was involved in as Secretary of State. Young Americans with an understanding of peoples, places, and cultures have a clear advantage in today's rapidly-changing global economy . . ."

—Madeleine K. Albright, U.S. Secretary of State (1997–2001), quoted in the AAG *Newsletter*, Vol. 46, No. 10, November, 2011

THEY MAJORED IN GEOGRAPHY . . .
Prince William (Duke of Cambridge)
Michael Jordan (NBA star, Chicago Bulls)
Augusto Pinochet (Military Ruler of Chile)

As to our leaders knowing the map they must navigate, consider this little incident in President Nixon's Oval Office, as described by another Harvard figure, former secretary of state Henry Kissinger, in his book *Years of Renewal*:

> As part of some U.N. celebration, the Prime Minister of Mauritius had been invited to Washington. Mauritius is a subtropical island located in the Indian Ocean . . . it enjoys plenty of rainfall and a verdant agriculture. Its relations with the United States were excellent. Somehow my staff confused Mauritius with Mauritania, an arid desert state in West Africa that had broken diplomatic relations with us in 1967 as an act of solidarity with its Muslim brethren in the aftermath of the Middle East War.
>
> This misconception produced an extraordinary dialogue. Coming straight to the point, Nixon suggested that the time had come to restore diplomatic relations between the United States and Mauritius. This, he noted, would permit resumption of American aid, and one of its benefits might be assistance in dry farming, in which, Nixon maintained, the United States had special capabilities. The stunned visitor, who had come on a goodwill mission from a country with, if anything, excessive rainfall, tried to shift to a more promising subject. He enquired whether Nixon was satisfied with the operation of the space tracking station the United States maintained on his island.
>
> Now it was Nixon's turn to be discomfited as he set about frantically writing on his yellow pad. Tearing off a page, he handed me a note that read: "Why the hell do we have a space tracking system in a country with which we do not have diplomatic relations?" (Kissinger, 1999)

So don't be too sure about geographic knowledge in Washington, D.C. It's pretty obvious that we were not well enough acquainted with the physical or cultural geography of Indochina when we blundered (McNamara's word) into the Vietnam War, and I am sure that many of us had doubts about our leaders' knowledge of the regional or human geography of Iraq in the winter of 2003—remember those cheering, grateful crowds that would line the roads? I often cite that old canard about war teaching geography, but in our case we must add a word: belatedly.

Perhaps the most important byproduct of geographic learning, early or belatedly, lies in its role as an antidote to isolationism. Can there be a more crucial objective than this? In our globalizing, ever more interconnected, still-overpopulated, increasingly competitive, and dangerous world, knowledge is power. The more we know about our planet and its fragile natural environments, about other peoples and cultures, political systems and economies, borders and boundaries, attitudes and aspirations, the better prepared we will be for the challenging times ahead.

From this perspective, geography's importance is second to none.

HOW DID IT COME TO THIS?

There's no denying it: for all its putative importance, geography as a school subject and as a university discipline in the United States is, to put it mildly, underrepresented. This wasn't always the case. There was a time when geography was well established as a discipline at Harvard and Yale, when geography was also widely taught in America's schools. During and after the First World War, through the interwar period and again during and after the Second World War, geography was a prominent component of American education. In prewar debates, wartime strategy, and postwar reconstruction, geographers played useful, sometimes crucial roles. Geographers were the first to bring environmental issues to public attention. They knew about foreign cultures and economies. They had experience with the workings of political boundaries. They produced the maps that helped guide United States policies.

In the 1950s and early 1960s, Americans continued to be well versed in geography. American success during the Second World War had drawn our attention to the outside world as perhaps never before. Maps, atlases, and globes sold by the millions. The magazine with geography's name on it, *National Geographic*, saw its subscription grow to unprecedented numbers. University Geography Departments enrolled more students than they could handle. When President John F. Kennedy launched the Peace Corps, geographers and geography students were quickly appointed as trainers and staffers.

But, as so often happens when social engineers get hold of a system that's working well, the wheels came off. Professional educators thought they had a better idea about how to teach geography: rather than educating students in disciplines such as history, government, and geography,

they would teach these subjects in combination. That combination was called social studies. The grand design envisioned a mixture that would give students a well-rounded schooling, a kind of civics for the masses, which implied that school teachers would no longer be educated in the disciplines either. They, too, would study social studies.

Prospective teachers from the School of Education had been among my best and most interested students at the University of Miami during the early 1970s. They registered in large numbers in two courses: World Regional Geography, which was an overview of the geography of the wider world, and Environmental Conservation, a course that was years ahead of its time, and to which even the Department of Biology sent its students. But when the social studies agenda took effect, the student teachers stopped coming. They now had other requirements that precluded their registration in geography.

We geographers knew what this would mean and what it would eventually cost the country. The use and knowledge of maps would dwindle. Environmental awareness would decline. Our international outlook would erode. Our businesspeople, politicians, and others would find themselves at a disadvantage in a rapidly shrinking, ever more interconnected—and competitive—world. Many of us wrote anguished letters to government agencies and elected representatives, to school district leaders and school principals. Fortunately, many private and parochial schools continued to teach geography. But for public education, the die was cast.

REVERSAL OF FORTUNE

This set of educational circumstances in little more than a decade produced exactly what geographers had predicted: an evident and worsening national geographic illiteracy. All of us who were teaching at the time have stories of students' disorientation, some of them amusing, most of them worrisome. By its very name, the catch-all social studies rubric excluded the elementary but crucial physical geography (including basic climatology) topics that had been part of the high-school geography curriculum. This was the one subject in which students got an idea of the importance of understanding human-environment interactions as well as the workings of climate and weather, and it was a huge loss. When these students got to college and enrolled in a first-year geography course,

they were at an enormous disadvantage: they simply did not know these basics.

Some university faculties recognized this situation and decided to do something about it. Georgetown University was one of them, and I saw the results firsthand while I was on the faculty of Georgetown's School of Foreign Service from 1990 to 1995. Every incoming student was required to take a course called Map of the Modern World, a one-credit course offered by the noted political geographer Charles Pirtle. In one semester, students were expected to become familiar not only with the layout of the political world, but also with general patterns of geopolitical change, general environmental and climactic conditions, and resource distributions. It was a tall order, but here is what impressed me most: at the end of their four-year degree program, Georgetown students are asked to list the course that pushed their knowledge forward more than any other. Map of the Modern World, a freshman geography course you would think most students had long forgotten, led the rankings year after year. It was a tribute to Charlie Pirtle, to be sure—but it also said something about the relevance of geography in the opinion of these capable students.

Unfortunately the Georgetown remedial model was (and still is) a rarity, not a commonplace. The geographic illiteracy of entering freshmen lowered the level of academic discourse in many an introductory class, and faculty devised various ways of dealing with it. Some professors were, shall we say, more sensitive to students' problems than others, and occasionally stories leaked out about embarrassing moments in the classroom. One of these stories involved a colleague of mine at the University of Miami who liked to start his class by asking students to identify a number of prominent geographic locations on a blank map of the world's countries. The results were always abysmal, and they grew worse as time went on. The good professor would grade the class as a whole and, reportedly with biting sarcasm, would announce the large percentage of participants who could not locate the Pacific Ocean, the Sahara, Mexico, or China.

Early in the fall semester of 1980, the student newspaper, the *Miami Hurricane*, got hold of the test, a summary of test results, and the professor's witty commentary. The paper's front-page story on this tale of "geographic illiteracy" was picked up by the major news media. NBC's *Today* show appeared on campus. ABC's *Good Morning America* invited

the principals to New York, but the segment was too brief to throw real light on the problem.

The news, however, had spread throughout the country, and while officials at the University of Miami fretted about what the story might do to the university's reputation, teachers elsewhere tried their own tests on their students. We are all too familiar with the results. At one Midwestern college, only 5 percent of the students could identify Vietnam on a world map. At another college, only 42 percent correctly named Mexico as our southern neighbor. Specialists, including some of the very educators who had helped engineer the demise of school geography, claimed to be "dismayed" at such results. While geographers were not surprised, the question was: how would we reverse this ignominious tide of ignorance?

ENTER THE SOCIETY

Tales of on-campus geographic blindness soon led to newspaper stories of public illiteracy as well. Journalists took to the streets with outline maps of the United States and of the world, asking people at random to identify such features as New York State and the Pacific Ocean and (so it seemed) gleefully reporting the embarrassing tallies. Their stories, however, were usually buried among marginalia.

But then something happened that had the potential to change the picture quite radically. President Reagan, upon arriving in Brasilia, the capital of Brazil, to open an important international conference, pronounced himself pleased to be in . . . Bolivia. This caused quite a stir in Brazil, and his faux pas made the front page of *USA Today*, which busied itself identifying similar gaffes by other politicians. Now geographic illiteracy suddenly was headline news, and the television networks fell over themselves covering it. One of them, ABC-TV, called the University of Miami, which relayed the call to me at a hotel in Baltimore where I was attending a meeting. That call led to my first appearance on *Good Morning America*, and the response to my segment (from the Netherlands) generated a week-long geography series a few months later and my six-year appointment to the *GMA* staff as geography editor subsequently.

But it would take more than the support of *GMA*'s perceptive executive producer, Jack Reilly, to make a real dent in our national geographic illiteracy. As it happened, however, I had a parallel opportunity through my appointment as an editor at the National Geographic Society in 1984.

In 1980 I had had the good fortune of being invited to join the Society's Committee for Research and Exploration, and I began almost immediately to discuss ways of involving the Society in the campaign. The Society's president, Gilbert M. Grosvenor, was sympathetic to the idea. He seemed to be galvanized by a Society-commissioned Gallup Poll that proved without a doubt that American students had fallen far behind their European and other foreign contemporaries in terms of their geographic knowledge. When I joined the NGS staff full time in 1984 for a six-year editorial term, I was able to help mobilize a crucial alliance.

To most observers, it would have seemed natural for an organization known as the National *Geographic* Society to come to the aid of the discipline. But it was not so simple. For many years, the Society and the discipline had not enjoyed good relations. To the Society and its leadership, professional geographers seemed snobbish, insulated, and often unimaginative. To professional geographers, the Society's popularization of its magazine and the rubric of geography was inappropriate and misleading. "There's precious little geography in *National Geographic*," said my professor at Northwestern University when I arrived there as a graduate student in 1956. "If you're going to subscribe, you'd better have the magazine sent to your home. Not a good idea to see it in your department mailbox here."

That amazed me. In fact, when I was living in Africa during the early 1950s, *National Geographic* was my window to the world, its maps a source of inspiration. I had written its president, Gilbert H. Grosvenor, in 1950 to tell him so. He sent a gracious letter in response, urging me to continue my interest in geography and inviting me to visit the Society's headquarters "if [I] were ever to come to the United States." But as a graduate student, I soon realized that the National Geographic Society and its publications were generally not held in high esteem among "professional" geographers.

Grosvenor's grandson, Gilbert M. Grosvenor, however, was not one to let such bygones get in the way. He launched a massive financial and educational campaign in support of geography at the school level, realizing better than most of us that the schools and their teachers were the key to the future of the discipline. High-school students, he knew, were not coming to college in any numbers intending to major in geography, because they never saw geography as an option when they graduated. The social studies debacle had pretty well depleted the ranks of geography teachers, so the first order of business was to prepare large numbers

of teachers to teach a geography curriculum. Since the geography curriculum itself had atrophied, Grosvenor appointed a prominent specialist in geographic education, Christopher "Kit" Salter, to resurrect it. Salter, in consultation with the half dozen or so geographers on the Society's staff, developed a spatially and environmentally based framework that would come to be known as the "Five Themes" of geography. In 1986 the Society printed several million copies of an annotated map in full color titled "Maps, The Landscape, and Fundamental Themes in Geography," providing every school in the country with as large a supply as needed.

Meanwhile, Salter under NGS auspices organized a nationwide network of so-called Geographic Alliances representing every State in the Union. These alliances consisted of geography teachers supported by the Society in various ways. Representatives of each alliance were invited to Society headquarters in Washington, D.C. for instruction in geographic education; they would in turn assemble teachers in their home States to convey what they had learned. Thus the number of teachers competent to teach geography increased exponentially, as did grass-roots support for the revival of the subject in schools all over the country.

Grosvenor raised significant funding for the project, testified on Capitol Hill on behalf of geography as an essential component of national education standards, buttonholed politicians, and crisscrossed the country speaking for geography. Not everyone on his staff in Washington was enthused by, or even supportive of, all these efforts, and not all professional geographers ensconced in their academic departments appreciated what he did. But the leadership of the Association of American Geographers had the good sense to extend formal recognition to him for a campaign that closed the book on old, painful disharmony between Society and discipline.

DON'T KNOW MUCH ABOUT GEOGRAPHY

So where are we today? I wish I could report that all the foregoing drastically altered the level of exposure of American elementary and high-school students to geography. By the middle of the first decade of this century, the best assessment was that when the Society's campaign began, about 7 percent of American students were getting some geographic education; after nearly 20 years and an estimated investment of about $100 million, that figure was still below 30 percent. Five years later, the picture did not look much brighter. "Don't Know Much About

Geography" was the headline in the *Wall Street Journal* of July 20, 2011, reporting the results of the National Assessment of Educational Progress, also called the Nation's Report Card, that tested how U.S. Students were doing in geography (Banchero, 2011). Only one-third of American fourth-graders could determine distance by using the scale on a map. Less than half of eighth-graders knew that Islam originated in what is today Saudi Arabia. "Geography Report Card Finds Students Lacking," headlined the *New York Times* on the same day, stating that high-school seniors demonstrated the least ability in geography, with only 20 percent found to be proficient or better, compared to 27 percent of eighth-graders and 21 percent of fourth-graders (Hu, 2011).

Why is the picture so bleak? It is not especially encouraging to report that things looked no better in history or civics exams; some analysts were quoted as saying that the social sciences, especially geography, are being pushed out of school curricula because of the intense focus on mathematics and English as required by the legal stipulations of the No Child Left Behind program. But other observers noted that the amount of classroom time allotted to the social sciences had actually increased on average, although geography seemed comparatively disadvantaged. A board member of the National Assessment Governing Board, Shannon Garrison, was quoted in the *Wall Street Journal* as noting that geography in middle and high schools is often an "unclaimed subject," with the responsibility for teaching it frequently "unclear." My colleague Roger Downs, a professor of geography at Pennsylvania State University who for decades has been in the forefront of campaigns to improve geography's status and prospects, expressed concern that "geography's role in the curriculum is limited and, at best, static."

It is dispiriting to contemplate this picture in the context of then-NGS President Gilbert Grosvenor's optimistic address before the National Press Club on July 27, 1988 in which he described the creation of the Society's National Geography Teachers Alliance program, with the goal of training 15,000 geography teachers through annual, month-long, intensive summer institutes at the Society's Washington headquarters and requiring each teacher to offer at least three in-service workshops in their local school districts: "This summer alone we'll have 700 of them in (their) classrooms" (Grosvenor, 1988). A quarter of a century later we are looking at the same inadequacies that impelled Grosvenor to invest so heavily in the nation's geographic literacy needs. The combination of circumstances that causes this situation is complicated, and geography's

plight mirrors a larger crisis in K-12 education that is reflected by American students' deteriorating rankings in international tests of the same kind. But geography's challenge is greater in part because geographic illiteracy infects many educators at all levels (including, in my experience, some college and university deans—this is no K-12 monopoly) through no fault of their own: they came to their jobs without formal education in the subject and have a vague view of its role and importance. In truth, the National Geographic Society's Alliance program was a drop in a very large bucket—a welcome and well-intentioned one, but an effort that did more to prove how hard the task would be than to achieve the goals it set.

This is not to suggest that the NGS campaign has borne no fruit at all. Undoubtedly the situation would be significantly worse than it is had the Society's initiatives and programs not been mobilized; the Alliance teachers brought geography to the attention of students some of whom chose geography as their college or university major, an uptick noted by registrars. The Society's media presence put geography on front pages and in network television programs. Geography's presence in the venerable Magazine is far stronger than it used to be, and its articles and maps form a poster for the discipline in the public eye. To quote professor Downs: "As the economic and cultural forces of globalization and the impacts of global environmental change are felt by everybody everywhere, the case for geography seems both obvious and inescapable." Yes, but in making the case we have a long way to go.

WILL GEOGRAPHY BE HISTORY?

Some of my colleagues take a dim view of the future of geography as a discipline. Yes, the United States Congress endorsed the establishment of National Geography Week every November, and the winner of the annual National Geography Bee, modeled on the famous spelling bee, gets television coverage every spring. National newspapers and network media are paying more attention to geography.

But against these promising developments in the public arena stand some worrisome negatives, two in particular. Ours is a history-obsessed culture. From archeology to geology and paleontology to linguistics, we tend to focus on the temporal. In higher education, spatial science gets short shrift just as geography still does at the school level. To Americans it is inconceivable that a university or college, whether prestigious or

unpretentious, could exist without a history department. No basic curriculum, whether at Harvard or at a Midwest community college, would exclude a history component. The same cannot be said for geography.

And professional geographers, as we have noted, are divided on the substance of their discipline. It's probably a healthy debate, it isn't the first time, and it goes on in other disciplines, too. But it can be confusing to college and university administrators who read our scholarly journals and aren't sure just what our consensus is. History, anthropology, and biology are more clearly defined—they think.

I take a fairly Neanderthal view of this issue. Our basic, common ground, I feel, lies in regional geography, human-cultural geography, and physical (environmental) geography, along with the analytical tools students will need as they begin to specialize even at the undergraduate level, ranging from statistical analysis to Geographic Information Systems. Beyond this, the tie that binds us—but need not constrain those who go off in other directions—is the spatial perspective and spatial analysis. To those who doubt geography's disciplinary future I say that our great opportunity lies at the interface of environment and humanity. We have been at this for the better part of a century and we were ahead of our contemporaries for much of that time. We should reclaim our position.

As to geography becoming history, I must tell you that I admire and envy the way historians have made their case to the general public as well as academically. Every time I turn on my television I seem to find some "presidential historian" commenting on good deeds and misdeeds of former presidents. And I agree: it is true that we should be reminded now and then of what President Nixon knew about Watergate and when he knew it. *When*, after all, is history's key question. But more recently we had a president who evoked the question: what did the president do and *where* did he do it? That's geography! We need a presidential geographer! My proposals to this effect have, for some reason, been ignored by the networks.

Seriously, we professional geographers have not done an adequate job of informing the general public of what it is we do—and why geography matters. We may not be alone in that respect; scientists in other disciplines also contribute to the public perception that scientific research tends to be conducted behind the walls of academia's "ivory tower." Without having reliable evidence at hand, I surmise that only a very small percentage of scientists feel comfortable in the public arena, confident

enough to explain to ordinary people why what is being studied is important and relevant to those paying the bills as taxpayers or donors. But among those very few are scholars whose impact on the public—and on their disciplines—has been exemplary. The astronomer Carl Sagan, whose research focused on the physics and chemistry of planetary surfaces and atmospheres, did much to draw public attention to cosmology at a time when space probes were opening new scientific horizons. His interest in the origins of life on Earth and in the search for extraterrestrial intelligence fired the public imagination, and through a series of books and a highly successful television program, Sagan popularized not only cosmology but also simultaneous advances being made in evolutionary theory and neurophysiology. How many young students he attracted to these and related specializations will never be known, but many of them now work in America's public and private space programs.

Some readers may judge that it is rather easier to get the public excited over cosmology and space exploration than over geography. Indeed, the talented *New York Times* science writer John N. Wilford, invited to address a plenary session at the 2001 meeting of the Association of American Geographers, opined that geographers have "done a poor job of speaking the popular language, of conveying in simple and direct terms what is important about their work" (Wilford, 2001). But when geographers have the opportunity, they tend to find a very interested and receptive public audience, because it is not difficult to relate geography to immediate and daily concerns that affect us all, from climate change to the rise of China and from globalization to terrorism. In the process, it is always gratifying to hear from a listener or viewer who says that the geographic perspective on old and seemingly intractable problems is new and exciting. It's worth the effort.

GEOGRAPHIC LITERACY AND NATIONAL SECURITY

Geographic knowledge is a crucial ingredient of our national security. We have crossed the threshold to a century that will witness massive environmental change, major population shifts, recurrent civilizational conflicts, China's emergence as a geopolitical as well as an economic superpower, unifying Europe's transformation into a major player on the international stage—among other developments yet unforeseen. Among my colleagues are geographers who conduct research on the likelihood

of coming energy crises and how to forestall them, on the risks of WMD (Weapons of Mass Destruction) dissemination and how to mitigate them, on the impact of global climate change in especially vulnerable areas and how to confront it. These are serious issues indeed, and while geographic knowledge by itself cannot solve them, they will not be effectively approached without it. WMD diffusion, for example, is driven by technology as well as ideology. The technology is the stuff of other disciplines, but ideology has significant geographic ramifications. Extremism of the kind that propelled the Taliban movement to power in Afghanistan from its bases in mountainous and remote western Pakistan tends to fester in isolated locales, and there is nothing uniquely Islamic about this. States that fail, at dreadful cost to their inhabitants, tend to lie segregated from the mainstreams of global interaction and exchange. From Somalia to Afghanistan, from Cambodia to Liberia, from Myanmar to North Korea, their peoples pay a terrible price.

Geography is a superb antidote to isolationism and provincialism. Some specialists in geographic education argue that our persistent national geographic illiteracy results from our own "splendid" isolation between two oceans and two nations, but we are learning that this spatial solitude means little in a fast-globalizing world. During the Vietnam War, there were politicians who advocated "bombing the North back to the Stone Age," and the United States had the power to do so. What the United States was unable to do was to persuade tens of millions of Vietnamese to change their ideology. More recently in Iraq, military intervention proceeded quickly and efficiently, leading to premature assertions that the war was won. But the real war, for Iraqis' hearts and minds, still lay ahead and entailed a costly insurgency that devastated the country's heartland, was countered by an uneasy alliance between invaders and former tribal enemies, and sowed the seeds for post-occupation violence. The United States and its allies had equipment and ordinance, but could not forestall the sectarian strife that accompanied and followed the withdrawal of American forces from Iraq in December 2011. Too few Americans knew the region, spoke the languages, understood the customs and rhythms of life, comprehended the depth of feelings.

And too few Americans understood the geographic implications of the Iraq intervention. Commenting on "Iraq's Tenuous Post-American Future," L. Paul Bremer, former U.S. Presidential Envoy to Iraq, postulates that "Geography is forever and Iraq lives in a rough neighborhood . . ." (Bremer, 2011). How's that again? Geography is *forever?* Tell that to the

GEOGRAPHY AND FOREIGN POLICY

As a professional geographer living in Washington in the 1990s, I dreaded the intermittent appearance of media reports on international surveys that ranked American high-school students near the bottom of the geographic-literacy league. Dinner-party conversation would be spiked with sarcastic commentary ("they couldn't name the Pacific?") and enlivened by amusing stories of adults—some of them politicians and diplomats—embarrassing themselves and their nation in international settings. A repeat favorite concerned President Reagan, who had opened a conference in Brasilia by pronouncing himself pleased to be in Bolivia.

Worse, those reports and anecdotes tended to confirm the public's image of geographic knowledge as equivalent to skill in naming places. It is a useful skill, to be sure, but it has about as much relevance to geographic knowledge as a vocabulary table has to literature. No, geographers were troubled by the decline in geographic literacy in America because we knew it would have foreign policy implications.

WHAT IS LOST WHEN GEOGRAPHIC EDUCATION—AT ALL LEVELS—WITHERS?

What is lost when geographic education—at all levels—withers? Take a comprehensive undergraduate curriculum in the "social" sciences and you will see three recurring perspectives: the temporal (historical), spatial (geographic) and structural (political, economic). Each informs the others, but the spatial perspective is indispensable because it alerts us to the significance of place and location in any analysis of issues ranging from the environmental to the political. That's why geographers tend to reach for their map when they first hear of a major development—such as the intervention in Iraq—and put their Geographic Information Systems to work. But as those dreaded surveys show, even well-educated Americans, on average, are not able to use maps to maximum effect.

Chinese who have transformed their Pacific Rim provinces from backwater to global juggernaut in little more than one generation. Or the occupants of luxury high-rise apartments and villas in Dubai, where modernization meets Islam. Or the residents of Singapore who can remember their city-state's desultory days of stagnation. Or the citizens of the former Soviet Union, who witnessed the disintegration of their political-geographic edifice. No, geography is anything but forever. Start

A second, and crucial, loss involves environmental awareness and responsibility. Geography, alone among the "social" sciences, has a strong physical—that is, natural—dimension. Before geography's decline in American high schools, young students first heard of weather systems and climate change in their geography classes and learned how resource distribution relates to conservation and responsible use.

My geography teacher, Eric de Wilde, raised a question in class in 1948 that kept me thinking forever after: Given the seesaw of ice-age temperature changes, how has history been influenced by climate? From him I learned that we live in an ice age and that we are lucky to experience a brief warm spell between glaciations. Ask the average citizen today what the difference is between an ice age and a glaciation and you are not likely to get a satisfactory answer. Small wonder that politicians can capitalize on public confusion.

So long as we have national leaders who do not adequately know the environmental and cultural geographies of the places they seek to change through American intervention and whose decisions in environmental arenas are insufficiently informed by geographic perspectives, we need to enhance public education in geography. Whether the world likes it or not, the United States has emerged from the 20th century as the world's most powerful state, capable of influencing nations and peoples, lives and livelihoods from pole to pole. That power confers on Americans a responsibility to learn as much as they can about those nations and livelihoods, and for this there is no better vehicle than geography.

The United States and the world will face numerous challenges in the years ahead, among which three will stand out: rapid environmental change, a rising tide of terrorism empowered by weapons of mass destruction and the emergence of China as a superpower on the global stage. To confront these challenges, the American public needs to be the world's best-informed about the factors and forces underlying them and the linkages among them. Geography is the key to understanding these interconnections.

—Washington Examiner, July 22, 2005

with that premise, and you'll get things wrong. Mr. Bremer ends his commentary by arguing that "President Obama made a serious mistake in withdrawing all American forces" from Iraq. Apparently things went so well, you see, while they were there.

As I will suggest in the chapters that follow, challenges loom from a number of directions—the rise of China and its growing power, notions

in Moscow of a Greater Russia to encompass parts of the former Soviet empire, the destabilizing weaknesses of Europe, the ascent of India on the regional and global stage, the economic role of a burgeoning Brazil in a competitive world. But how much more does the general public in America know about China today (or India or Brazil) than it (or its leaders) knew about Southeast Asia four decades ago or the Middle East after 9/11?

If there was a way to mobilize it, I would not only reinstate departments of geography in our "elite" universities but also resurrect regional studies in all such departments, old and new, to ensure that, once again, a growing cadre of field-experienced, language-capable, locally connected scholars would populate government, intelligence, and other national agencies whose efforts will be at least as important as high-altitude weapons delivery, satellite imagery, and GIS scrutiny. Geography, unlike its public image, is an entertaining as well as enlightening field, but what follows is also serious—dead serious.