



REGIONAL EXPERTISE – THE KEY TO UNDERSTANDING CULTURE AND LANGUAGE

Peter P. Siska

Regional expertise is the key to understanding our planet's complex systems. This expertise is a necessary step in accomplishing intercultural understanding, economic prosperity and the peaceful co-existence of humans on this planet. Due to the complexity of regional systems, the definition of regional expertise is intricate and convoluted.

Regional expertise consists of geographically referenced and logically synthesized physiographic and socioeconomic information from five fundamental natural spheres (lithosphere, pedosphere, atmosphere, hydrosphere, biosphere) and diverse human sphere that includes socio-economic subsystems such as industrial development, agriculture, manufacturing, service and human psycho-behavioral qualities including culture, religion and politics. The purpose of regional expertise is to identify, determine, describe, analyze and synthesize diverse spatial systems and their individual characteristics. In addition, regional knowledge is always place specific. Therefore, regional expertise also includes the delineation of quasi homogeneous spatial entities as unique non-repeating individual regions or as repeating general patterns that capture and explain the diversity of natural and human phenomena. The ability to synthesize natural, cultural and social, economic and behavioral aspects is the desirable outcome in developing regional knowledge systems and spatial models.

The latest research in neuroscience points out that the development of regional expertise also involves specific neural systems in the human brain that are responsible for spatial cognition and the acquisition of regional information (Metoyer 2008). It appears that the lack of education in spatial sciences may result in the underdevelopment of the neural system that in turn further blocks people from the acquisition of regional information and becoming regional experts. The integration of neuroscience, psychology and education is therefore the first step in developing models such as the Hierarchical-Parallel Model that increases the effects of processing spatial



information in humans. Due to the complexity of regional expertise, it appears important to pay attention to previously acquired concepts and ideas that may block learners from acquiring a correct understanding of regional complexity and developing their expertise in regional science (Reinfried and Schuler 2008). The specific aspects of regional knowledge can be further broken down into three main sub-systems of regional expertise:

- A) Natural subsystems
- B) Economic and Social subsystems (including demography, culture, politics, religion)
- C) Synthesis of the two previous subsystems

The groundwork for human activities, including culture and language, developed in a natural environment prior to the arrival of the first humans. The current natural environment is significantly influenced by endogenetic processes that derive their energy from the planet earth and exogenetic processes which main source of energy is solar radiation. The Precambrian period produced continental shields. During the Paleozoic period, the Caledonian and Hercynian crust was added to continental shield, and finally this process was completed at the end of the Cretaceous period; in the Tertiary period the Alpine-Himalayan systems, Rocky Mountains, Andes and the entire area of the Pacific Rim were attached to the current inhabitable space for humans. Until now, the natural environment is a life support system for humans—without natural resources and the appropriate atmospheric conditions, the human species would not be able to function and survive on this planet. The newest research, based on excavations in eastern and southern Africa indicates that people appeared on this planet earlier than 200,000 years ago (White 2003). During this period, people learned the essential of survival (economic activities), developed communication system, signs, symbols, language, organized values, behaviors and expressions (art, music) into cultural systems. As we are seeking to find the birthplace of human race we are also learning about our first regional environment and interaction of humans with natural environment and its resources.

Birth of regional expertise and human culture



The first regional expertise was associated with human survival, particularly in seeking a variety of food sources. Modern research indicates that people have been challenged to find ways of feeding themselves as we do today (Bryant, Dean 2006), and to meet this need they had to develop intelligent communication skills that helped them to navigate through their landscape. Atkins and Bowler (2001) noted that through food sources and consumption the natural environment physically becomes part of humans and is closely linked with culture and language. Culture and language became more sophisticated and refined as people progressed in their efforts to find new resources and developed infrastructures, trade and economy, art, music and recreational activities. All of these aspects are important parts of regional competence. Many scholars in the past came to believe that regional expertise is the crown of human knowledge because it synthesizes every aspect of natural, cultural and economic life in one unified theory and attempts to predict future political and economic developments in the region (Anuchin 1960, Siska 1983). The classical period of French geography as portrayed by Vidal de La Blache and A. Demangeon underlined the significance of regional analysis and stressed the importance of studying regional patterns and predicting the future regional development (Blouet 2007). The following categories highlight the complexity of regional expertise:

I. Natural systems:

- 1) Lithosphere (rocks, minerals)
- 2) Relief (landforms and their evolution)
- 3) Pedosphere (soils)
- 4) Hydrosphere (fluvial system, limnology, underground water, ocean)
- 5) Atmosphere (Climate and its changes)
- 6) Biosphere (plant communities and animal kingdom)

II. The economic systems:

- 1) Agriculture and Forestry
- 2) Industry and Manufacturing
- 3) Tertiary activities (banking, retail, medicine, tourism)



- 4) Quaternary activities (Information technology)
- 5) Transportation

III. The social system

- 1) Culture and ethnic diversity
- 2) Religion
- 3) Politics and political development

Natural Systems and Regional Competence

The lithosphere is the upper layer of our planet; it is broken apart into continental plates that drift across the planet. The lithosphere is rich in environmental resources such as coal, metals, uranium and oil. The latter is currently the most important source of energy for economically developed regions. The most abundant oil deposits are in Saudi Arabia, Kuwait, Iraq, UAE, Iran and Venezuela. Moreover, the geographic distribution of natural resources has always had strategic implications.

The relief consists of infinite shapes in the lithosphere; many applications use the term topography or terrain as synonyms for landforms. The term “terrain” is important for military applications. Nowadays, terrain modeling and visualizations are incorporated into geographic information systems (GIS) to assist the military in finding the optimal location during battlefield operations. Many military operations were terrain specific, i.e. the army purposefully selected specific terrain characteristics to meet the opposing armies or to decrease its own visibility. Global Position Systems (GPS) are used today for determining the precise locations of features in the terrain with the help of four satellites that are identified by GPS receivers. The highly dissected terrains usually have a specific cultural impact. For example the mountainous regions in the Andes gave rise to the Inca culture, and the European Tirol or Valachian cultures originated through human interactions with the Alps and Carpathian Mountains. The warm descending wind (der Föhnwind) from the Alps is a highly influential factor in Alpine



agriculture; in fact, the word “Föhn” is actually synonymous with the word “hairdryer” in several Central European countries. In contrast, the regions with low relief dissectivity gave rise to civilizations that adapted to river cycles and developed a floodplain culture that is specific for that region. There are undisputed inner connections between the natural regional components such as the lithosphere and its properties as well as culture and language. Energy resources such as oil and natural gas have set some countries at the top of economic prosperity. Norway, for example, became the number one country in the world according to the human development index (Blouet 2007) due to a large extent to their oil resources. Norway developed a national oil fund and invested it wisely into world economy so that all people can benefit from this strategic resource. Unfortunately, the great natural wealth of poor countries is not always used efficiently for the benefit of all. Quite often it only benefits the elite and very little trickles down to the larger population who are at the bottom of economic survival. Examples include Nigeria, Chad, Sudan and many other developing countries especially in Africa and Asia.

The closely tied biogenetic systems (soils, climate, plants and animals) have been of the utmost importance for human survival since the beginning of our existence. The Steppes of the Ukraine, the pampas in Argentina or prairies in North America are the breadbaskets of our planet. In these regions, the soils, climate and original vegetation prepared excellent conditions for highly food productive regions in the world and gave rise to distinct cultures that harmonized with this natural environment. Soil is also a strategic layer. Its availability on our planet decreases due to pollution and erosion processes that are often triggered by human insensitive and irresponsible agricultural and industrial practices. It took ten thousand years to produce a soil layer; yet, it can be removed and destroyed in less than an hour from the planet’s surface.

One of the most important natural components for human life is water. The famous ancient civilizations arose thanks to hydrologic conditions near large rivers such as the Nile, Euphrates, Tigris Indus, Brahmaputra, Yellow River, etc). Culture and language thrived in these societies; it is critically tied with culture and language. These hydraulic civilizations developed near large flowing rivers that regularly inundated the floodplains with minerals and humus as well as washing away salts deposits that precipitated from underground water. These floodplains gave



rise to our oldest civilizations on this planet such as the Sumerian Civilization along the Euphrates and Tigris where the Garden of Eden was rumored to be and our first written language developed. Similarly, the Egyptian civilization developed along the Nile, the Harappan Civilization along the Indus, the Ganges-Brahmaputra Civilization in India, and the Yangzi and Huang He Civilization in East Asia. They developed due to natural conditions into unique cultural entities with a specific language ontology. Until today, water is a life giving source in arid climates, an inexpensive transportation link in technologically developed and developing regions, a source of electrical power for many countries around the world such as Norway. Underground water is extremely important as a source of drinking water for cities and residential areas especially in arid regions. Rivers, lakes and underground water have become a point of international disputes highlighting the strategic significance of this important natural and not completely renewable resource. Conservative estimates predict the depletion of drinking water later in this century.

One of the most discussed aspects in science, media and politics involves global warming on our planet that is generally attributed to the increase of carbon dioxide in the atmosphere. Regional expertise has taken notice of the severe destruction in the natural environment by industrial pollution and what changes global warming and previously mentioned natural elements has created. Regional systems are closely tied entities; therefore, a change in one component of a system causes a chain reaction in the rest of the components. Global warming varies from place to place and its impact on specific regional system must be determined and recorded.

The Economic Components and Regional Competence

It is difficult to develop a full understanding of a region without understanding its main economic sources and their regional distribution. The poorer and less developed countries are heavily dependent on agriculture. The third world countries typically have plantation types of agriculture (coffee, tropical fruits, etc). Market prices can drastically change from year to year dependent on the international prices, which in turn has a tremendous impact on people. Therefore education and infrastructure suffers from underdevelopment, malnutrition, and



diseases such as AIDS. This leads to political and military corruption and overall vulnerability towards conflicts and instability. Well-developed agriculture guarantees food supplies for the regions in question and sustains the peace and stability of a region. Highly developed countries have extremely effective agriculture systems that produce food surpluses that the local population is not able to consume and must be exported overseas. Forestry on the other hand has undergone a series of rapid changes during the last few decades. Less developed regions are supplying timber to technologically more advanced countries causing the depletion of forests and fertile soil which plays an important role in poorer countries. In addition, the forest is a great natural reservoir of carbon and producer of oxygen. Therefore, deforestation is becoming strategically important for the United States and the rest of the world. The current increase of carbon dioxide in the atmosphere causes global warming and problems for all countries. Perhaps the best examples is the Amazon region where strong deforestation is on the way of causing severe impacts on the natural environment, economic growth and increase of carbon in the atmosphere. These chains of events affect the indigenous population in the Amazon Rainforest by changing their lifestyle and language which have been for thousands of years intact.

Industry, manufacturing and service sector

Regional expertise requires knowledge of the key industrial activities including manufacturing, mining, banking, retail, and tourism. It is important how each sector participates in the overall volume of gross domestic or gross national product. In highly developed countries, banking and retail dominate the economy while in less developed countries manufacturing represents a significant portion of the country's economy. As the significance of economy increases so does the international trade, intercultural connection and significance of languages. Current developments in science, technology and international trade has made English the “Lingua France” of the world. After downfall of Roman Empire there has been no single language that would unite multicultural and Multilanguage regions of the world. After WWII English became the universal communication tool in all aspects of human life including economic development, intercultural interaction, education and academic scholarly performance. In addition, many languages are modifying their vocabulary and grammar using numerous English/American terms



and expressions. After the downfall of the Iron Curtain, a large number of English words were adopted and modified by other central and eastern European languages; this new word usage has rapidly increased and is still increasing. A few examples from Slovak are: “kreativita” from creativity, “monitoring,” “weekend” became “wikend” or “grupa,” from group, “šoppingy” from shopping—many others are created almost daily. This development can be marked as an “explosion” of English into Central European languages.

Population and Demography

One of the most important components in regional expertise is the population—its geographic distribution, changes over time and study of factors that have influenced population developments across our planet. It is a very dynamic component of every county and region and will affect the economy, politics and social life in the future as well as having strategic significance. One of the main concerns of population development is the great disproportion between the population explosions in Africa and Latin America and the population implosion that is occurring in Europe and Japan. The massive immigration from highly populated countries into less developed countries is to be expected in the future. Population development will significantly affect economic life and change the ethnic and religious composition of the world. For example, Islamic populations in Germany before WWII were almost non-existent; today, it has reached 4% and is expected to rise. This is already having a serious impact on German political, ethnic and cultural life and will continue to do so over the next few decades. Another example of population implosion is Russia. Due to its large territorial size and tremendous military power the population implosion of Russia causes of serious concern as to what potential immigration will occur in the future to replace aging Russian population.

Agriculture and Forestry

Agriculture and Forestry are traditional economic activities constituting the basic support system for human survival. The food production is absolute necessity and domain of agricultural activity. There is a great regional division in terms of effectiveness of agricultural production on



this planet. The developed countries in Europe, North America and Australia are capable of producing surplus of food production due to using high technology and modern scientific methods especially genetics. Therefore the portion of agriculture on GDP (great domestic product) of these countries is minimal. For example in the United States the agriculture contributes less than one percent to national GDP, in Western and Central Europe this proportion varies between 2 – 5 percent. On the other hand the developing countries indicate completely different situation. The lack of modern technology, scientifically based methods and traditional farming the food production is barely enough to support basic needs of society. The agriculture contributes excessively to gross domestic product and countries economy is heavily depended on weather conditions and food prices on world market. The agriculture in poorest countries (east African region, sub-Saharan region, West Timor, Bangladesh etc) is often not able to produce enough to supply basic nutrition needs for their people. The agriculture contributes 80% to GDP and is mostly plantations based (coffee, tea, rice). The annual changes in coffee prices can have devastating impacts on national economy. Perhaps the most critical region in the world is Sahel encompassing all countries adjacent to Sahara Desert such as Mali, Mauretania, Niger. Chad, Central African Republic, Sudan, Eritrea, Ethiopia Somalia) Millions of people in these countries live from agriculture particularly livestock and cattle herding. They are exceedingly dependent on annual precipitation levels. Since late 1960th Sahel experiences severe drought and annual precipitation levels drop below critical amount 400 mm that is barely enough to keep steppe environment in reproductive state. Malnutrition and starvations in this region often results in political instability, conflicts and even ethnic cleansing. Agriculture in developing regions is often in primitive stage based on deforestation, exhaustion of nutrients in the soil and soil erosion (Amazon region). Deforestation also releases carbon into the atmosphere from burning trees and poor agricultural practices that significantly contributes to global warming on this planet. Global warming in return strengthens droughts and advancement on Sahara southward and migration of Sahel people south. This “domino” effect can be stopped only by coordinated effort among all countries in the world especially developed countries who have means and methods and knowledge.

Transportation and Urban Development



There has been a vast amount of geographic literature dedicated to transportation dynamics in global scale or in individual regions of the world (Taaffe et al 1996). Transportation system provides raw materials, goods, people and services to urban centers and industrial nodes. In some sense transportation system can be compared to human cardiovascular system i.e. what is a blood for human body is transportation system for economic and social life of world regions. In addition transportation network plays significant role in military operations and defense systems. Nowadays transportation took on digital form. At the present gigabytes of data travel around the world through digital superhighways and satellite network and provide large volumes of data for industry, education, research, banking, services and culture. Geographic systems such as geographic information systems (GIS) and global positioning systems play significant role in this development (Siska 2006). Transportation is also regionally diverse. North America and Europe developed highly dense communication networks while less developed countries suffer from low density transportation network and decaying road system that cannot support economic development and overall increase in living conditions. Transportation and growth of urbanization are closely connected. Urbanization coefficient in all developed countries increased to 80% i.e. 80% of all people in the country live in cities and urban centers while 20% still stays in rural areas. In some countries such as Belgium the urbanization coefficient reached 90%. The urbanization in less developed regions of the world especially in Africa is much less pronounced barely reaching 30-35%. The rapid increase of population in urban centers in less developed regions of the world is mostly due to uncontrolled emigration from agricultural areas and causes chaos, health problems due to low hygiene, and overall increase of poverty. Transportation network and urban centers are the most likely targets of terrorists and therefore significance of geography of transportation and urbanization development requires special attention for homeland security. The volume of goods, resources, people and digital information indicate geographic patterns that needs to be studied, understood, mapped and the future developments assessed. This information is invaluable for regional planning and effective use of natural and human resources.

Globalization



One of the most recently discussed topics among scholars, politicians, economists and regional experts is the issue of globalization. Globalization was predicted by scholars more than half a century ago (de Chardin 1964). The European Union that currently encompasses 27 countries is perhaps one of the best examples of new global economy, banking, infrastructure and political and justice system. Last year the global output of EU equaled the total economic output of the United States (over 13 trillion dollars) and became a leading force in world economy. The current trends in this direction indicate that globalization continues to rise in the future as the wealth, technology and interest of developed countries continues to flow into the less developed regions. This development is depended on increasing global security. Globalization plays significant role in transforming local cultures. The regional knowledge and expertise will provide georeferenced information to all levels of knowledge based systems causing a global positive domino effect i.e the improvement in synthesis of natural systems and their functions with human spheres continues to improve understanding of cultures; the latest phenomenon increases global cooperation and more effective usage of natural resources which in return leads to increase in global prosperity; global prosperity will lead to global peace and security which is the ultimate dream of all mankind. Regional expertise is the key concept for better understanding planet's diversity, its causes and impacts.

Bibliography

- Anucin, V. A. (1960) *Teoreticheskiye Problemy Geografii*. Geografkiz, Moscow.
- Atkins, P. and I. Bowler (2001) *Food in Society: Economy, Culture, Geography*. Oxford University Press.
- Blouet, B. W. (2007) *The EU & Neighbors. A Geography of Europe in the Modern World*. John Wiley & Sons. Inc. New York.
- Burenhult, N. and S. C. Levinson (2008) *Language and landscape: a cross-linguistic perspective*. *Language Sciences*, Vol. 30. No2-3. Pages 135-150
- de Chardin, P. T. (1964). *The Future of Man*. Harper & Row. London.



- Metoyer, S. (2008) The Hierarchical Parallel Model (HP – Model) of Spatial Cognition: Integration of neuroscience and education to improve spatial thinking and geographic literacy. Presentation at the Association of American Geographers Meeting in Boston.
- Reinfried S. M., and S. M. Schuler (2008) Students' Ideas About Geographical Concepts and Feasible Strategies to Induce Conceptual Change – A State-Of-The – Art Of Research report. Presentation at the Association of American Geographers Meeting in Boston.
- Siska, P. 1983. Regionalno-Geograficka Studia Banovskej Pahorkatiny a Prilahlej Horskej Obruby. The Department of Regional Geography, Komensky University, Bratislava, Slovakia. Dissertation.
- Siska, P. P (2006) Satellite Based Mapping, Navigation, and Communication Systems: Global Security Concerns. In J.F. Forest: Homeland Security. Protecting America's Targets. Vol. 3. Praeger Security International: West Point, London.
- Taaffe, E. J. Gauthier, H. L. and M. E. O'Kelly. (1996). Geography of Transportation, 2nd ed. Englewood Cliffs, N.J.: Prentice Hall
- White et al (2003). "Pleistocene *Homo sapiens* from Middle Awash, Ethiopia". *Nature* 423 (6491): 742-7
- TRADOC. (2008). "Army Culture and Foreign Language Strategy."