Human Geography

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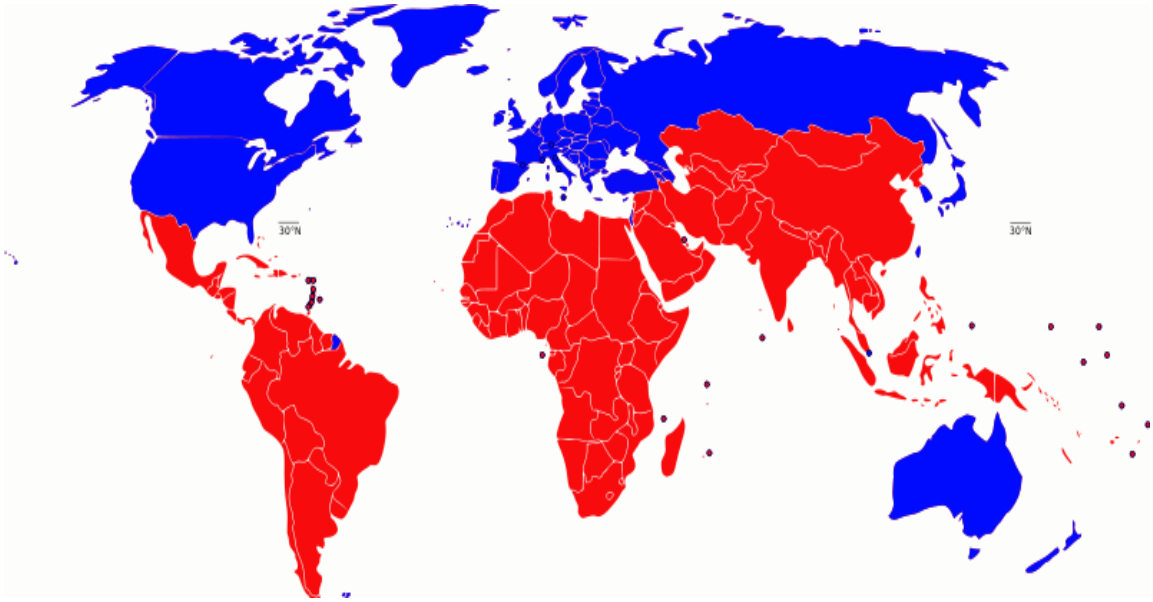


The "north-south divide". A key feature of Development and Economic Geography

Human geography is one of the two major sub-fields of geography. Human geography is the study of human use and understanding of the world and the processes which have affected it. Human geography broadly differs from physical geography in that it has a greater focus on studying intangible or abstract patterns surrounding human activity and is more receptive to qualitative research methodologies. It encompasses most of the aspects of the social sciences. While the major focus of human geography is not the physical landscape of the Earth, it is not possible to discuss human geography without going into the physical landscape with which human activities are being played out and environmental geography which is an important link between the two. human geology is both methodologically and theoretically diverse, including feminist, marxist, post-structural approaches, among others, and using both qualitative methods (such as ethnographies and interviews) and quantitative methods (such as survey research, statistical analysis and model building).

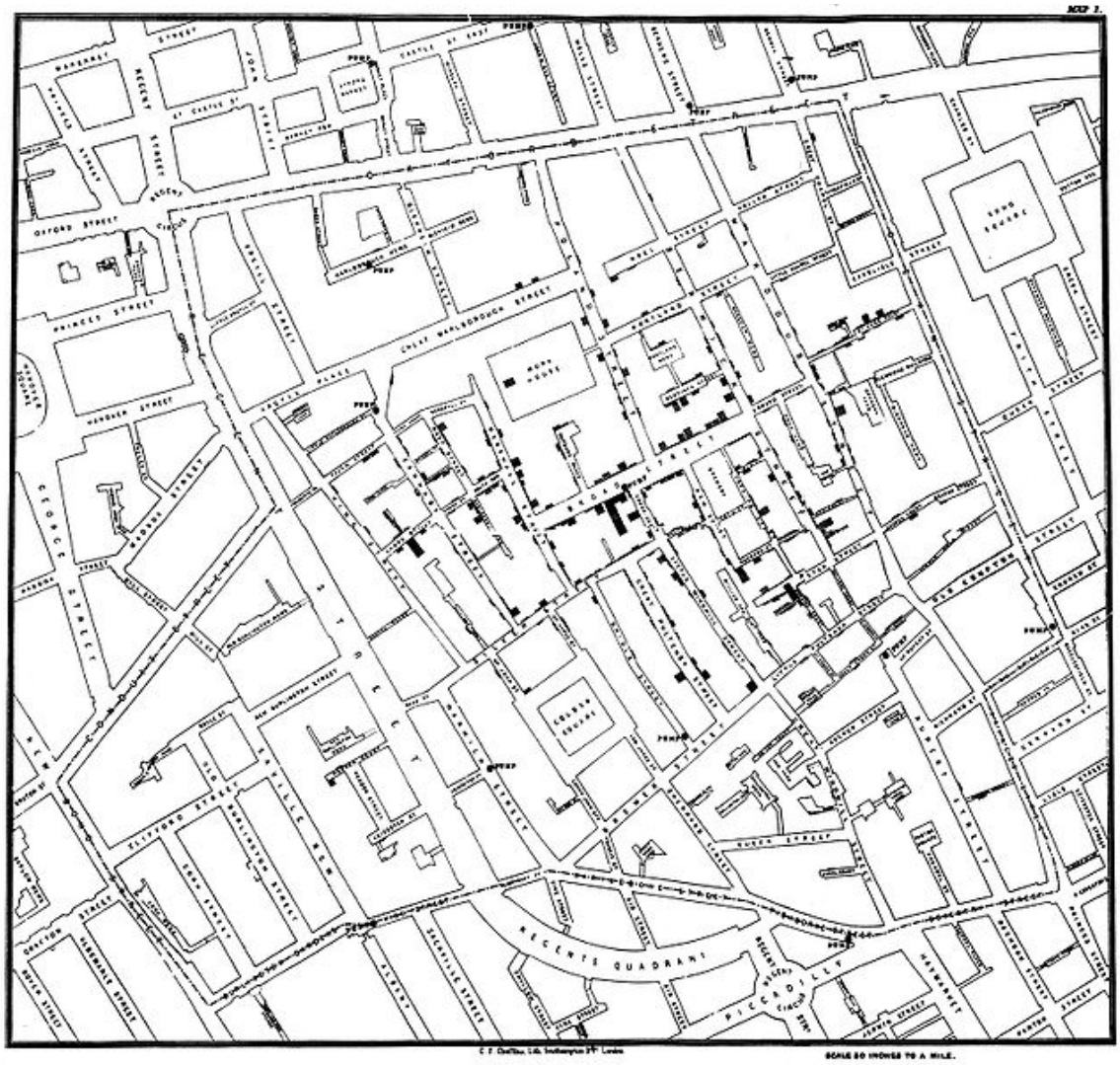
History

In the History of geography geographers have often recorded and described features of the Earth that might now be considered the remit of human, rather than physical, geographers. For example Hecataeus of Miletus, a geographer and historian in ancient Greece, described inhabitants of the ancient world as well as physical features.

It was not until the 18th and 19th Centuries, however, that geography was recognised as a discrete academic discipline

The Royal Geographical Society was founded in England in 1830, although the United Kingdom did not get its first full Chair of geography until 1917. The first real geographical intellect to emerge in United Kingdom geography was Halford John Mackinder, appointed reader at Oxford University in 1887.

The National Geographic Society was founded in the USA in 1888 and began publication of the *National Geographic* magazine which became and continues to be a great popularizer of geographic information. The society has long supported geographic research and education.



Original map by John Snow showing the clusters of cholera cases in the London epidemic of 1854

One of the first examples of geographic methods being used for purposes other than to describe and theorise the physical properties of the earth is John Snow's map of the 1854 Broad Street cholera outbreak. Though a physician and a pioneer of epidemiology, the map is probably one of the earliest examples of Health geography.

However, the now fairly distinct differences between the subfields of physical and human geography developed at a later date. This connection between both physical and human properties of geography is most apparent in the theory of **Environmental determinism**, made popular in the 19th Century by Carl Ritter and others, and with close links to evolutionary biology of the time. Environmental determinism is the theory that a people's physical, mental and moral habits are directly due to the influence of their natural environment. However, by the mid 19th Century, environmental determinism was under

attack for lacking methodological rigour associated with modern science, and later as serving to justify racism and imperialism.

A similar concern with both human and physical aspects is apparent in the later **Regional geography**, during the later 19th and first half of the 20th Centuries. The goal of regional geography, through regionalization, was to delineate space into regions and then understand and describe the unique characteristics of each region, in both human and physical aspects. With links to possibilism and cultural ecology, some of the same notions of causal effect of the environment on society and culture, as with environmental determinism remained.

By the 1950s, however, the **quantitative revolution** lead to strong criticism of regional geography. Due to a perceived lack of scientific rigour in and overly descriptive nature of the discipline, and a continued separation of geography from geology and the two subfields of physical and human geography, geographers in the mid 20th Century began to apply statistical and mathematical model methods to solving spatial problems. Much of the development during the quantitative revolution is now apparent in the use of Geographic information systems; the use of statistics, spatial modelling and positivist approaches is still important to many branches of human geography. Well-known geographers from this period are Fred K. Schaefer, Waldo Tobler, William Garrison, Peter Haggett, Richard J. Chorley, William Bunge, and Torsten Hägerstrand.

From the 1970s a number of critiques of the positivism now associated with geography emerged. Known under the term **critical geography** this signalled another turning point in the discipline. Behavioral geography emerged for some time as a means to understand how people made perceived spaces and places, and made locational decisions. More influentially, **radical geography** emerged in the 1970s and 1980s, drawing heavily on Marxist theory and techniques, and is associated with geographers such as David Harvey and Richard Peet. Seeking to say something 'meaningful' about the problems recognised through quantitative methods, to provide explanations rather than descriptions, to put forward alternatives and solutions and to be politically engaged, rather than the detachment associated with positivist methods. (The detachment and objectivity of the quantitative revolution was itself critiqued by radical geographers as being a tool fo capital). Radical geography and the links to Marxism and related theories remain an important part of contemporary human geography (Antipode (Journal)) Critical geography also saw the introduction of **humanistic geography**, associated with the work of Yi-Fu Tuan, which, though similar to behavioural geography, pushed for a much more qualitative approach in methodology.

The changes under critical geography have led to contemporary approaches in the discipline such as Feminist geography, New cultural geography, and the engagement with postmodern and poststructural theories and philosophies.

List of notable human geographers

Carl Ritter - considered to be one of the founding fathers of modern geography

- Carl Ritter (1779–1859), considered to be one of the founding fathers of modern geography and first chair in geography at the Humboldt University of Berlin, also noted for his use of organic analogy in his works.
- Friedrich Ratzel (1844–1904), environmental determinist, invented the term *Lebensraum*
- Paul Vidal de la Blache (1845–1918), founder of the French School of geopolitics and possibilism.
- Sir Halford John Mackinder (1861–1947), author of *The Geographical Pivot of History*, co-founder of the London School of Economics, along with the Geographical Association.
- Carl O. Sauer (1889–1975), critic of environmental determinism and proponent of cultural ecology.
- Walter Christaller (1893–1969), economic geographer and developer of the central place theory.
- Richard Hartshorne (1899–1992), scholar of the history and philosophy of geography.
- Torsten Hägerstrand (1916–2004), critic of the quantitative revolution and regional science, noted figure in critical geography.
- Milton Santos (1926–2001) winner of the Vautrin Lud prize in 1994, one of the most importants geographers in South America.
- Waldo R. Tobler (born 1930), developer of the First law of geography.
- Yi-Fu Tuan (born 1930) A Chinese-American geographer.
- David Harvey (born 1935), world's most cited academic geographer and winner of the Lauréat Prix International de Géographie Vautrin Lud, also noted for his work in critical geography and critique of global capitalism.

- Evelyn Stokes (1936-2005). Professor of geography at the University of Waikato in New Zealand. Known for recognizing inequality with marginalised groups including women and Māori using geography.
- Steve Butcher, Professor of Human Geographical Studies at Kent State University
- Allen J. Scott (born 1938), winner of Vautrin Lud Prize in 2003 and the Anders Retzius Gold medal 2009; author of numerous books and papers on economic and urban geography, known for his work on regional development, new industrial spaces, agglomeration theory, global city-regions and the cultural economy.
- Edward Soja (born 1941), noted for his work on regional development, planning and governance, along with coining the terms synekism and postmetropolis.
- Doreen Massey (born 1944), key scholar in the space and places of globalization and its pluralities, winner of the Vautrin Lud Prize.
- Michael Watts, Class of 1963 Professor of Geography and Development Studies, University of California, Berkeley
- Nigel Thrift (born 1949), developer of non-representational theory.
- Derek Gregory (born 1951), famous for writing on the Israeli, U.S. and UK actions in the Middle East after 9/11, influenced by Edward Said and has contributed work on imagined geographies.
- Cindi Katz (born 1954), who writes on social reproduction and the production of space. Writing on children's geographies, place and nature, everyday life and security.
- Gillian Rose (born 1962), most famous for her critique: *Feminism & Geography: The Limits of Geographical Knowledge* (1993), which was one of the first moves towards a development of feminist geography.

Human geography journals

As with all social sciences, human geographers publish research and other written work in a variety of academic journals. Whilst human geography is interdisciplinary, there are a number of journals with a human geography focus.

These include:

- *Antipode*
- *Area*
- *Economic Geography*
- *Environment and Planning*
- *Geografiska Annaler*
- *Global Environmental Change: Human and Policy Dimensions*
- *Migration Letters*
- *Transactions of the Institute of British Geographers*
- *Geoforum*
- *Progress in Human Geography*

Chapter-1

History of Geography

Babylon

The oldest known world maps date back to ancient Babylon from the 9th century BC. The best known Babylonian world map, however, is the *Imago Mundi* of 600 BC. The map as reconstructed by Eckhard Unger shows Babylon on the Euphrates, surrounded by a circular landmass showing Assyria, Urartu and several cities, in turn surrounded by a "bitter river" (Oceanus), with seven islands arranged around it so as to form a seven-pointed star. The accompanying text mentions seven outer regions beyond the encircling ocean. The descriptions of five of them have survived.

In contrast to the *Imago Mundi*, an earlier Babylonian world map dating back to the 9th century BC depicted Babylon as being further north from the center of the world, though it is not certain what that center was supposed to represent.

Greco-Roman world

The ancient Greeks saw the poet Homer as the founder of geography. His works the *Iliad* and the *Odyssey* are works of literature, but both contain a great deal of geographical information. Homer describes a circular world ringed by a single massive ocean. The works show that the Greeks by the 8th century BC had considerable knowledge of the geography of the eastern Mediterranean. The poems contain a large number of place names and descriptions, but for many of these it is uncertain what real location, if any, is actually being referred to.

Thales of Miletus is one of the first known philosophers known to have wondered about the shape of the world. He proposed that the world was based on water, and that all things grew out of it. He also laid down many of the astronomical and mathematical rules that would allow geography to be studied scientifically. His successor Anaximander is the first person known to have attempted to create a scale map of the known world and to have introduced the gnomon to Ancient Greece.

Hecataeus of Miletus initiated a different form of geography, avoiding the mathematical calculations of Thales and Anaximander he learnt about the world by gathering previous works and speaking to the sailors who came through the busy port of Miletus. From these accounts he wrote a detailed prose account of what was known of the world. A similar work, and one that mostly survives today, is Herodotus' *Histories*. While primarily a work of history, the book contains a wealth of geographic descriptions covering much of the known world. Egypt, Scythia, Persia, and Asia Minor are all described in great detail. Little is known about areas further a field, and descriptions of areas such as India are almost wholly fanciful. Herodotus also made important observations about geography. He is the first to have noted the process by which large rivers, such as the Nile, build up deltas, and is also the first recorded as observing that winds tend to blow from colder regions to warmer ones.

Pythagoras was perhaps the first to propose a spherical world, arguing that the sphere was the most perfect form. This idea was embraced by Plato and Aristotle presented empirical evidence to verify this. He noted that the Earth's shadow during an eclipse is curved, and also that stars increase in height as one moves north. Eudoxus of Cnidus used the idea of a sphere to explain how the sun created differing climatic zones based on latitude. This led the Greeks to believe in a division of the world into five regions. At each of the poles was an uncharitably cold region. While extrapolating from the heat of the Sahara it was deduced that the area around the equator was unbearably hot. Between these extreme regions both the northern and southern hemispheres had a temperate belt suitable for human habitation.

Hellenistic period

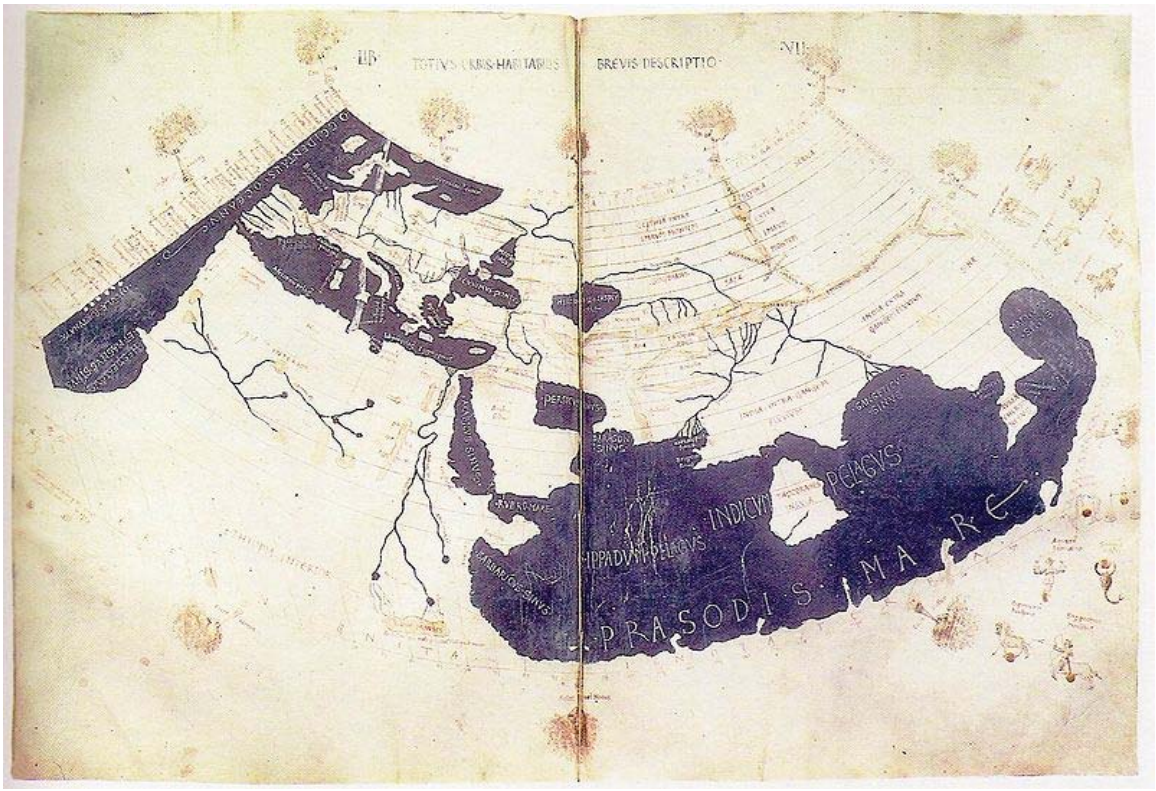
These theories clashed with the evidence of explorers, however. Hanno the Navigator had traveled as far south as Sierra Leone, and it is possible other Phoenicians had circumnavigated Africa. In the 4th century BC the Greek explorer Pytheas traveled through northwest Europe, and circled the British Isles. He found that the region was considerably more habitable than theory expected, but his discoveries were largely dismissed as fanciful by his contemporaries because of this. Conquerors also carried out exploration, for example, Caesar's invasions of Britain and Germany, expeditions/invasions sent by Augustus to Arabia Felix and Ethiopia (Res Gestae 26), and perhaps the greatest Ancient Greek explorer of all, Alexander the Great, who deliberately set out to learn more about the east through his military expeditions and so took a large number of geographers and writers with his army who recorded their observations as they moved east.

The ancient Greeks divided the world into three continents, Europe, Asia, and Libya (Africa). The Hellespont formed the border between Europe and Asia. The border between Asia and Libya was generally considered to be the Nile river, but some geographers, such as Herodotus objected to this. Herodotus argued that there was no difference between the people on the east and west sides of the Nile, and that the Red Sea was a better border. The relatively narrow habitable band was considered to run from the Atlantic Ocean in the west to an unknown sea somewhere east of India in the east. The

southern portion of Africa was unknown, as was the northern portion of Europe and Asia, so it was believed that they were circled by a sea. These areas were generally considered uninhabitable.

The size of the Earth was an important question to the Ancient Greeks. Eratosthenes attempted to calculate its circumference by measuring the angle of the sun at two different locations. While his numbers were problematic, most of the errors cancelled themselves out and he got quite an accurate figure. Since the distance from the Atlantic to India was roughly known, this raised the important question of what was in the vast region east of Asia and to the west of Europe. Crates of Mallus proposed that there were in fact four inhabitable land masses, two in each hemisphere. In Rome a large globe was created depicting this world. That some of the figures Eratosthenes had used in his calculation were considerably in error became known, and Posidonius set out to get a more accurate measurement. This number actually was considerably smaller than the real one, but it became accepted that the eastern part of Asia was not a huge distance from Europe.

Roman period



A 15th century depiction of the Ptolemy world map, reconstituted from Ptolemy's *Geographia* (circa 150)

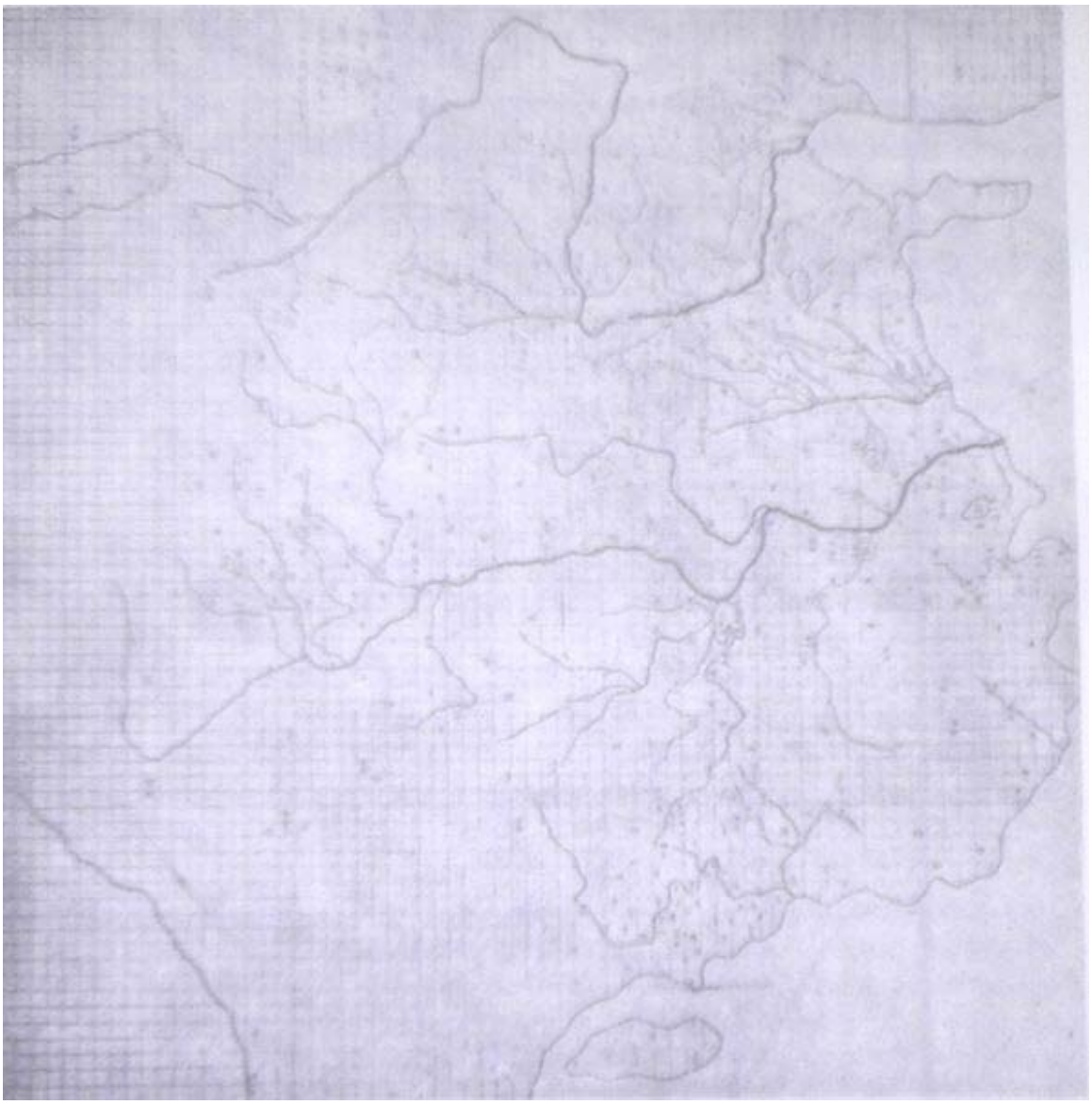
While the works of almost all earlier geographers have been lost, many of them are partially known through quotations found in Strabo. Strabo's seventeen volume work of

geography is almost completely extant, and is one of the most important sources of information on classical geography. Strabo accepted the narrow band of habitation theory, and rejected the accounts of Hanno and Pytheas as fables. None of Strabo's maps survive, but his detailed descriptions give a clear picture of the status of geographical knowledge of the time. A century after Strabo Ptolemy launched a similar undertaking. By this time the Roman Empire had expanded through much of Europe, and previously unknown areas such as the British Isles had been explored. The Silk Road was also in operation, and for the first time knowledge of the far east began to be known. Ptolemy's *Geographia* opens with a theoretical discussion about the nature and techniques of geographical inquiry, and then moves to detailed descriptions of much the known world. Ptolemy lists a huge number of cities, tribes, and sites and places them in the world. It is uncertain what Ptolemy's names correspond to in the modern world, and a vast amount of scholarship has gone into trying to link Ptolemaic descriptions to know locations.

Pliny the Elder's Natural History also has sections on geography. For the most part Ancient Greek geography was an academic field. There is little evidence that maps or charts were used for navigation. It does, however, seem that at least in Athens the people were acquainted with maps and that several were on public display. It was the Romans who made far more extensive practical use of geography and maps.

China

An early Western Han Dynasty (202 BC – 9 AD) silk map found in tomb 3 of Mawangdui, depicting the Kingdom of Changsha and Kingdom of Nanyue in southern China (note: the south direction is oriented at the top, north at the bottom).



The *Yu Ji Tu*, or *Map of the Tracks of Yu Gong*, carved into stone in 1137, located in the Stele Forest of Xian. This 3 ft squared map features a graduated scale of 100 li for each rectangular grid. China's coastline and river systems are clearly defined and precisely pinpointed on the map. Yu Gong is in reference to the Chinese deity described in the geographical chapter of the *Classic of History*, dated 5th century BC.

In China, the earliest known geographical Chinese writing dates back to the 5th century BC, during the beginning of the Warring States (481 BC-221 BC). This was the 'Yu Gong' ('Tribute of Yu') chapter of the book *Shu Jing* (*Classic of History*). The book describes the traditional nine provinces, their kinds of soil, their characteristic products and economic goods, their tributary goods, their trades and vocations, their state revenues and agricultural systems, and the various rivers and lakes listed and placed accordingly. The nine provinces in the time of this geographical work was very small in terrain size

compared to what modern China occupies today. In fact, its description pertained to areas of the Yellow River, the lower valleys of the Yangtze, with the plain between them and the Shandong peninsula, and to the west the most northern parts of the Wei River and the Han River were known (along with the southern parts of modern day Shanxi province).

In this ancient geographical treatise (which would greatly influence later Chinese geographers and cartographers), the Chinese used the mythological figure of Yu the Great to describe the known earth (of the Chinese). Apart from the appearance of Yu, however, the work was devoid of magic, fantasy, Chinese folklore, or legend. Although the Chinese geographical writing in the time of Herodotus and Strabo were of lesser quality and contained less systematic approach, this would change from the 3rd century onwards, as Chinese methods of documenting geography became more complex than found in Europe (until the 13th century).

The earliest extant maps found in archeological sites of China date to the 4th century BC and were made in the ancient State of Qin. The earliest known reference to the application of a geometric grid and mathematically graduated scale to a map was contained in the writings of the cartographer Pei Xiu (224–271). From the 1st century AD onwards, official Chinese historical texts contained a geographical section, which was often an enormous compilation of changes in place-names and local administrative divisions controlled by the ruling dynasty, descriptions of mountain ranges, river systems, taxable products, etc. The ancient Chinese historian Ban Gu (32–92) most likely started the trend of the gazeteer in China, which became prominent in the Southern and Northern Dynasties period and Sui Dynasty. Local gazeteers would feature a wealth of geographic information, although its cartographic aspects were not as highly professional as the maps created by professional cartographers.

From the time of the 5th century BC *Shu Jing* forward, Chinese geographical writing provided more concrete information and less legendary element. This example can be seen in the 4th chapter of the *Huainanzi* (Book of the Master of Huainan), compiled under the editorship of Prince Liu An in 139 BC during the Han Dynasty (202 BC-202 AD). The chapter gave general descriptions of topography in a systematic fashion, given visual aids by the use of maps (di tu) due to the efforts of Liu An and his associate Zuo Wu. In Chang Chu's *Hua Yang Guo Chi* (*Historical Geography of Szechuan*) of 347 AD, not only rivers, trade routes, and various tribes were described, but it also wrote of a 'Ba Jun Tu Jing' ('Map of Szechuan'), which had been made much earlier in 150 AD. The *Shui Jing* (*Waterways Classic*) was written anonymously in the 3rd century during the Three Kingdoms era (attributed often to Guo Pu), and gave a description of some 137 rivers found throughout China. In the 6th century AD, the book was expanded to forty times its original size by the geographers Li Daoyuan, given the new title of *Shui Jing Zhu* (*The Waterways Classic Commented*).

In later periods of the Song Dynasty (960-1279 AD) and Ming Dynasty (1368-1644 AD) there were much more systematic and professional approaches to geographic literature. The Song Dynasty poet, scholar, and government official Fan Chengda (1126–1193) wrote the geographical treatise known as the *Gui Hai Yu Heng Chi*. It focused primarily

on the topography of the land, along with the agricultural, economic and commercial products of each region in China's southern provinces. The polymath Chinese scientist Shen Kuo (1031–1095) devoted a significant amount of his written work to geography, as well as a hypothesis of land formation (geomorphology) due to the evidence of marine fossils found far inland, along with bamboo fossils found underground in a region far from where bamboo was suitable to grow. The 14th century Yuan Dynasty geographer Na-xin wrote a treatise of archeological topography of all the regions north of the Yellow River, in his book *He Shuo Fang Gu Ji*. The Ming Dynasty geographer Xu Xiake (1587–1641) traveled throughout the provinces of China (often on foot) to write his enormous geographical and topographical treatise, documenting various details of his travels, such as the locations of small gorges, or mineral beds such as mica schists. Xu's work was largely systematic, providing accurate details of measurement, and his work (translated later by Ding Wenjiang) read more like a 20th century field surveyor than an early 17th century scholar.

The Chinese were also concerned with documenting geographical information of foreign regions far outside of China. Although Chinese had been writing of civilizations of the Middle East, India, and Central Asia since the traveler Zhang Qian (2nd century BC), later Chinese would provide more concrete and valid information on the topography and geographical aspects of foreign regions. The Tang Dynasty (618-907 AD) Chinese diplomat Wang Xuance traveled to Magadha (modern northeastern India) during the 7th century AD. Afterwards he wrote the book *Zhang Tian-zhu Guo Tu* (Illustrated Accounts of Central India), which included a wealth of geographical information. Chinese geographers such as Jia Dan (730–805) wrote accurate descriptions of places far abroad. In his work written between 785 and 805 AD, he described the sea route going into the mouth of the Persian Gulf, and that the medieval Iranians (whom he called the people of the Luo-He-Yi country, i.e. Persia) had erected 'ornamental pillars' in the sea that acted as lighthouse beacons for ships that might go astray. Confirming Jia's reports about lighthouses in the Persian Gulf, Arabic writers a century after Jia wrote of the same structures, writers such as al-Mas'udi and al-Muqaddasi. The later Song Dynasty ambassador Xu Jing wrote his accounts of voyage and travel throughout Korea in his work of 1124 AD, the *Xuan-He Feng Shi Gao Li Tu Jing* (*Illustrated Record of an Embassy to Korea in the Xuan-He Reign Period*). The geography of medieval Cambodia (the Khmer Empire) was documented in the book *Zhen-La Feng Tu Ji* of 1297 AD, written by Zhou Daguan.

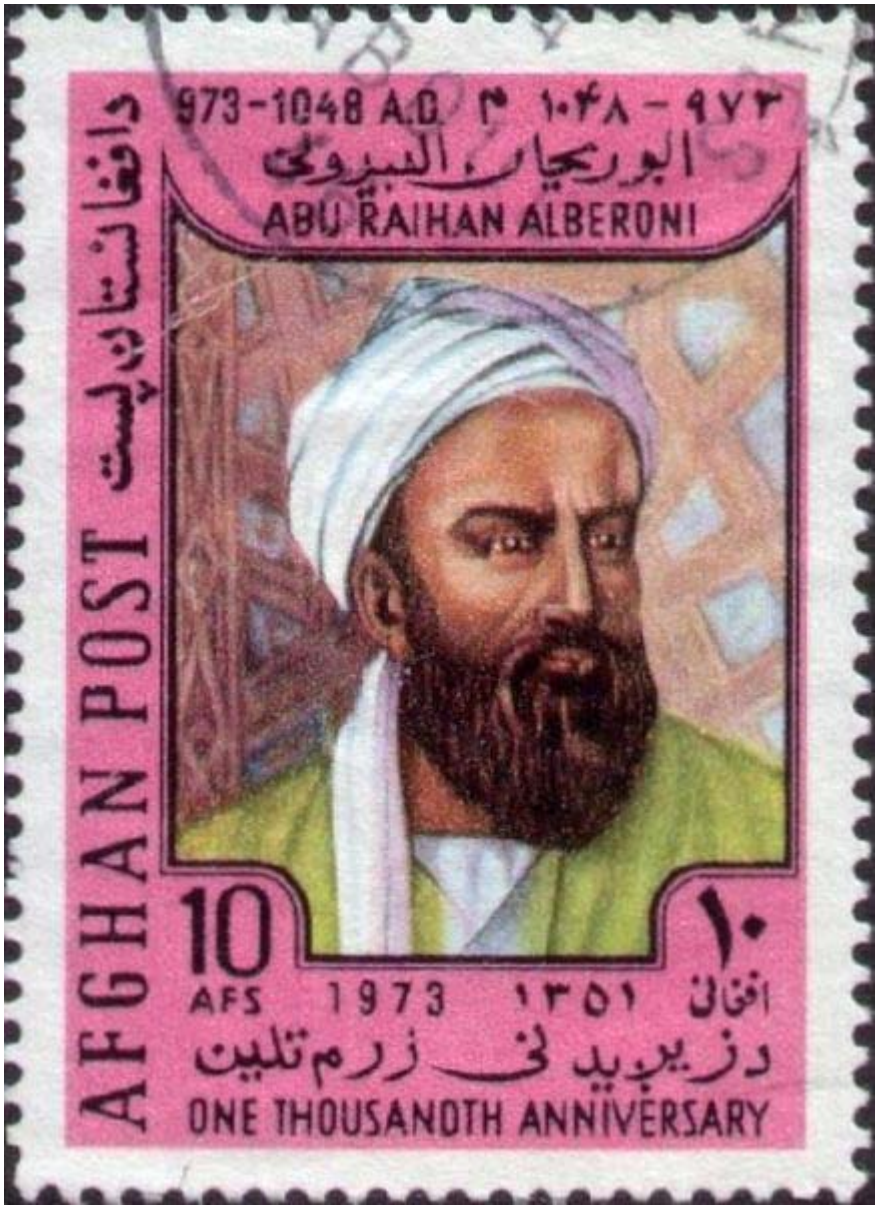
Medieval Islamic world

In the Middle East, Muslim geographers such as al-Idrisi, al-Yaqubi, al-Masudi, Ibn Khurdadhbih, Ibn al-Faqih, al-Istakhri, Ibn Battuta, Ibn Khaldun, etc. maintained the Greek and Roman techniques and developed new ones. The Islamic empire stretched from Spain to India, and Arab and Jewish traders (known as Radhanites) travelled throughout Eurasia, Africa and the Indian Ocean. The Arabs added a great deal of knowledge to expand and correct the classical sources. There were some representatives of the West that produced geographical works of quality, such as the Syrian bishop Jacob of Edessa (633-708), but this paled in comparison to the virtual mountain of work

published by Islamic writers of the Middle Ages (who were largely responsible for the foundations of knowledge present in later Western geography).

During the Muslim conquests of the seventh and early 8th centuries, Arab armies established the Islamic Arab Empire, reaching from Central Asia to the Iberian Peninsula. An early form of globalization began emerging during the Islamic Golden Age, when the knowledge, trade and economies from many previously isolated regions and civilizations began integrating due to contacts with Muslim explorers, sailors, scholars, traders, and travelers. Subhi Y. Labib has called this period the *Pax Islamica*, and John M. Hobson has called it the *Afro-Asiatic age of discovery*, in reference to the Muslim Southwest Asian and North African traders and explorers who travelled most of the Old World, and established an early global economy across most of Asia, Africa, and Europe, with their trade networks extending from the Atlantic Ocean and Mediterranean Sea in the west to the Indian Ocean and China Seas in the east, and even as far as Japan, Korea and the Bering Strait. Arabic silver *dirham* coins were also being circulated throughout the Afro-Eurasian landmass, as far as sub-Saharan Africa in the south and northern Europe in the north, often in exchange for goods and slaves. In England, for example, the Anglo-Saxon king Offa of Mercia (r. 757-796) had coins minted with the Shahadah in Arabic. These factors helped establish the Arab Empire (including the Rashidun, Umayyad, Abbasid and Fatimid caliphates) as the world's leading extensive economic power throughout the 7th–13th centuries.

In the 9th century, Alkindus was the first to introduce experimentation into the Earth sciences. An early adherent of environmental determinism was the medieval Afro-Arab writer al-Jahiz, who explained how the environment can determine the physical characteristics of the inhabitants of a certain community. He used his early theory of evolution to explain the origins of different human skin colors, particularly black skin, which he believed to be the result of the environment. He cited a stony region of black basalt in the northern Najd as evidence for his theory. In the early 10th century, Abū Zayd al-Balkhī, originally from Balkh, founded the "Balkhī school" of terrestrial mapping in Baghdad. The geographers of this school also wrote extensively of the peoples, products, and customs of areas in the Muslim world, with little interest in the non-Muslim realms. Suhrāb, a late 10th century Muslim geographer, accompanied a book of geographical coordinates with instructions for making a rectangular world map, with equirectangular projection or cylindrical cylindrical equidistant projection. In the early 11th century, Avicenna hypothesized on the geological causes of mountains in *The Book of Healing* (1027).



Abū Rayhān al-Bīrūnī was a polymath who is considered a pioneer in anthropology, geodesy and geology.

In mathematical geography, Abū Rayhān al-Bīrūnī, around 1025, was the first to describe a polar equi-azimuthal equidistant projection of the celestial sphere. He was also regarded as the most skilled when it came to mapping cities and measuring the distances between them, which he did for many cities in the Middle East and western Indian subcontinent. He often combined astronomical readings and mathematical equations, in order to develop methods of pin-pointing locations by recording degrees of latitude and longitude. He also developed similar techniques when it came to measuring the heights of mountains, depths of valleys, and expanse of the horizon, in *The Chronology of the Ancient Nations*. He also discussed human geography and the planetary habitability of the Earth. He hypothesized that roughly a quarter of the Earth's surface is habitable by

humans, and also argued that the shores of Asia and Europe were "separated by a vast sea, too dark and dense to navigate and too risky to try" in reference to the Atlantic Ocean and Pacific Ocean.

At the age of 17, al-Biruni calculated the latitude of Kath, Khwarazm, using the maximum altitude of the Sun. Al-Biruni also solved a complex geodesic equation in order to accurately compute the Earth's circumference, which were close to modern values of the Earth's circumference. His estimate of 6,339.9 km for the Earth radius was only 16.8 km less than the modern value of 6,356.7 km. In contrast to his predecessors who measured the Earth's circumference by sighting the Sun simultaneously from two different locations, al-Biruni developed a new method of using trigonometric calculations based on the angle between a plain and mountain top which yielded more accurate measurements of the Earth's circumference and made it possible for it to be measured by a single person from a single location. By the age of 22, al-Biruni had written several short works, including a study of map projections, *Cartography*, which included a method for projecting a hemisphere on a plane.

John J. O'Connor and Edmund F. Robertson write in the *MacTutor History of Mathematics archive*:

"Important contributions to geodesy and geography were also made by al-Biruni. He introduced techniques to measure the earth and distances on it using triangulation. He found the radius of the earth to be 6339.6 km, a value not obtained in the West until the 16th century. His *Masudic canon* contains a table giving the coordinates of six hundred places, almost all of which he had direct knowledge."

The Tabula Rogeriana, drawn by Al-Idrisi for Roger II of Sicily in 1154. Note that in the original map, the north is at the bottom and south at the top, in contrast to modern cartographic conventions.

The Arab geographer Al-Idrisi's Mappa Mundi incorporated the knowledge of Africa, the Indian Ocean and the Far East gathered by Arab merchants and explorers with the information inherited from the classical geographers to create one of the most accurate maps of the world to date. The Tabula Rogeriana was drawn by Al-Idrisi in 1154 for the Norman King Roger II of Sicily, after a stay of eighteen years at his court, where he worked on the commentaries and illustrations of the map. The map, written in Arabic, shows the Eurasian continent in its entirety, but only shows the northern part of the African continent.

In the 14th century, Ibn Baṭṭūṭah, a Moroccan, began his travels. He started as a pilgrim to Mecca, but continued his journeys for the next 30 years, covering some 73,000 miles (117,000 km). Before returning home, he had visited most of the Muslim world and beyond, from Europe and southern Africa in the west to eastern Asia in the east. The universal use of Arabic in the Muslim world and his status as judge trained in law gave him access to royal courts at most locations he visited.

Ibn Battuta (1304–1368) was a traveler and explorer, whose account documents his travels and excursions over a period of almost thirty years, covering some 73,000 miles (117,000 km). These journeys covered most of the known Old World, extending from North Africa, West Africa, Southern Europe and Eastern Europe in the west, to the Middle East, Indian subcontinent, Central Asia, Southeast Asia and China in the east, a

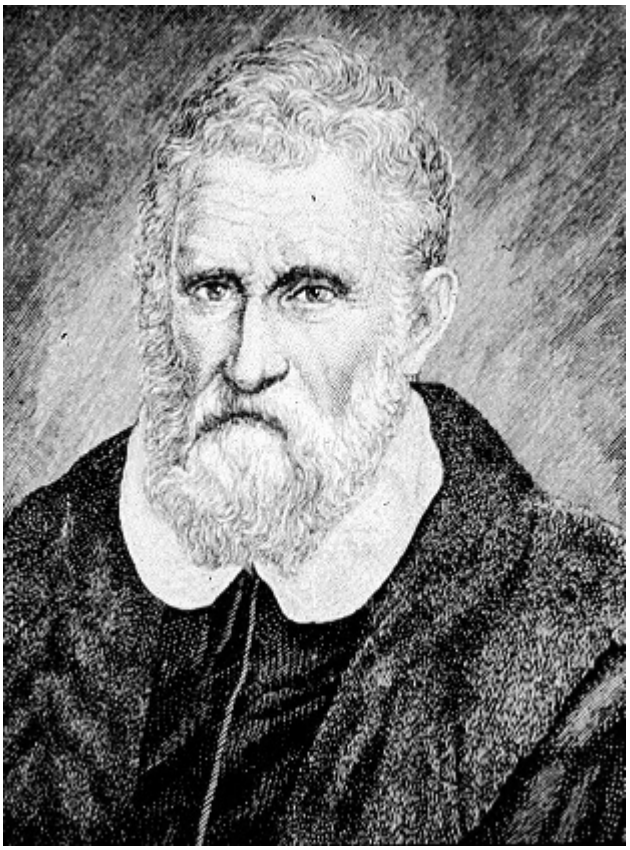
distance readily surpassing that of his predecessors and his near-contemporary Marco Polo.

Medieval Europe

During the Early Middle Ages, geographical knowledge in Europe regressed (though it is a popular misconception that they thought the world was flat), and the simple T and O map became the standard depiction of the world.

The trips of Venetian explorer Marco Polo in the 13th century, the Christian Crusades of the 12th century and 13th century, and the Portuguese and Spanish voyages of exploration during the 15th century and 16th century opened up new horizons and stimulated geographic writings. The Mongols also learned much about the geography of Asia. During the 15th century, Henry the Navigator of Portugal supported explorations of the African coast and became a leader in the promotion of geographic studies. Among the most notable accounts of voyages and discoveries published during the 16th century were those by Giambattista Ramusio in Venice, by Richard Hakluyt in England, and by Theodore de Bry in what is now Belgium.

Early modern period



Portrait of Marco Polo.

Following the journeys of Marco Polo, interest in geography spread throughout Europe. From around *circa* 1400, the writings of Ptolemy and his Islamic successors provided a systematic framework to tie together and portray geographical information. The great voyages of exploration in 16th and 17th centuries revived a desire for both accurate geographic detail, and more solid theoretical foundations. The *Geographia Generalis* by Bernhardus Varenius and Gerardus Mercator's world map are prime examples of the new breed of scientific geography.

Surviving fragment of the first World Map of Piri Reis (1513)

The Muslim Ottoman cartographer Piri Reis drawn navigational maps in his *Kitab-ı Bahriye*. The work includes an atlas of charts for small segments of the Mediterranean, accompanied by sailing instructions covering the sea. In the second version of the work,

he included a map of the Americas. The Piri Reis map drawn by the Ottoman cartographer Piri Reis in 1513 is an early surviving map to show the Americas.

19th century

By the 18th century, geography had become recognized as a discrete discipline and became part of a typical university curriculum in Europe (especially Paris and Berlin), although not in the United Kingdom where geography was generally taught as a sub-discipline of other subjects.

One of the great works of this time was *Kosmos: a sketch of a physical description of the Universe*, by Alexander von Humboldt, the first volume of which was published in German in 1845. Such was the power of this work that Dr Mary Somerville, of Cambridge University intended to scrap publication of her own *Physical Geography* on reading *Kosmos*. Von Humboldt himself persuaded her to publish (after the publisher sent him a copy).

In 1877, Thomas Henry Huxley published his Physiography with the philosophy of universality presented as an integrated approach in the study of the natural environment. The philosophy of universality in geography was not a new one but can be seen as evolving from the works of Alexander Von Humboldt and Immanuel Kant. The publication of Huxley physiography presented a new form of geography that analysed and classified cause and effect at the micro-level and then applied these to the macro-scale (due to the view that the micro was part of the macro and thus an understanding of all the micro-scales was need to understand the macro level). This approach emphasized the empirical collection of data over the theoretical. The same approach was also used by Halford John Mackinder in 1887. However, the integration of the Geosphere, Atmosphere and Biosphere under physiography was soon over taken by Davisian geomorphology.

Over the past two centuries the quantity of knowledge and the number of tools has exploded. There are strong links between geography and the sciences of geology and botany, as well as economics, sociology and demographics.

The Royal Geographical Society was founded in England in 1830, although the United Kingdom did not get its first full Chair of geography until 1917. The first real geographical intellect to emerge in United Kingdom geography was Halford John Mackinder, appointed reader at Oxford University in 1887.

The National Geographic Society was founded in the USA in 1888 and began publication of the *National Geographic* magazine which became and continues to be a great popularizer of geographic information. The society has long supported geographic research and education.

20th century

In the West during the second half of the 19th and the 20th century, the discipline of geography went through four major phases: environmental determinism, regional geography, the quantitative revolution, and critical geography.

Environmental determinism

Environmental determinism is the theory that a people's physical, mental and moral habits are directly due to the influence of their natural environment. Prominent environmental determinists included Carl Ritter, Ellen Churchill Semple, and Ellsworth Huntington. Popular hypotheses included "heat makes inhabitants of the tropics lazy" and "frequent changes in barometric pressure make inhabitants of temperate latitudes more intellectually agile." Environmental determinist geographers attempted to make the study of such influences scientific. Around the 1930s, this school of thought was widely repudiated as lacking any basis and being prone to (often bigoted) generalizations. Environmental determinism remains an embarrassment to many contemporary geographers, and leads to skepticism among many of them of claims of environmental influence on culture (such as the theories of Jared Diamond).

Regional geography

Regional geography is a study of regions throughout the world in order to understand or define the unique characteristics of a particular region, which consist of natural as well as human elements. Attention is paid also to regionalization which covers the techniques of delineating space into regions.

Regional geography is also a certain approach to geographical study, comparable to quantitative geography or critical geography. This approach prevailed during the second half of the 19th century and the first half of the 20th century, a period when then regional geography paradigm was central within the geographical sciences. It was later criticised for its descriptiveness and the lack of theory. Strong criticism was leveled against it in particular during the 1950s and the quantitative revolution. Main critics were G. H. T. Kimble and Fred K. Schaefer.

The regional geography paradigm has had an impact on many other geographical sciences, including economic geography and geomorphology. Regional geography is still taught in some universities as a study of the major regions of the world, such as Northern and Latin America, Europe, and Asia and their countries. In addition, the notion of a city-regional approach to the study of geography gained some credence in the mid-1990s through the work of geographers such as Saskia Sassen, although it was also criticized, for example by Peter Storper.

Notable figures in regional geography were Alfred Hettner in Germany, with his concept of chorology; Paul Vidal de la Blache in France, with the possibilism approach

(possibilism being a softer notion than environmental determinism); and, in the United States, Richard Hartshorne with his concept of areal differentiation.

Some geographers have also attempted to reintroduce a certain amount of regionalism since the 1980s. This involves a complex definition of regions and their interactions with other scales.

The Quantitative revolution

In the history of geography, the **quantitative revolution** was one of the four major turning-points of modern geography -- the other three being environmental determinism, regional geography and critical geography). The quantitative revolution occurred during the 1950s and 1960s and marked a rapid change in the method behind geographical research. The main claim for the quantitative revolution is that it led to a shift from a descriptive (idiographic) geography to an empirical law making (nomothetic) geography.

(Note: The quantitative revolution occurred earlier in Economics and Psychology and contemporarneously in Political science and other social sciences and to a lesser extent in History.)

Synopsis and Background

Many geography departments in the 1950s had recently separated from geology departments in the flux of postwar (World War II) enrollment. Because geologists of the time looked at geography as soft and unscientific, the feeling of many geographers was to persuade critics that geographers were not second-rate geologists. The changes during the 1950s through 1970s were not the introduction of mathematics into geography, but mathematics as a tool for explicit purposes and for statistical methodology and formal mathematical modeling.

In the early 1950s there was a growing sense that the existing paradigm for geographical research was not adequate in explaining how physical, economic, social, and political processes are spatially organized, ecologically related, or how outcomes generated by them are evidence for a given time and place. A more abstract, theoretical approach to geographical research has emerged, evolving the analytical method of inquiry.

The analytical method of inquiry led to the development of generalizations that are logically valid about the spatial aspects of a small set of closely defined events embodied in a wide range of natural and cultural settings. Generalizations may take the form of tested hypotheses, models, or theories and the research is judged on its scientific fit and its validity. Adoption of the analytical approach had helped geography become a more law-giving science, and the conception of the discipline as an idiographic field of study has become less acceptable starting in the 1980s.

The 1950s Crisis in Geography

During the late 1940s and early 1950s The crisis occurred for several reasons:

- The closing of many geography departments and courses in universities e.g. the abolition of the geography program at Harvard University in 1948
- Continuing division between Human and Physical geography - general talk of Human geography becoming an autonomous subject.
- Geography was seen (fairly or not) as overly descriptive and *unscientific*- there was, it was claimed, no explanation of *why* processes or phenomena occurred
- Geography was seen as exclusively educational - there were few if any applications of contemporary geography
- Continuing question of what geography is - Science, Art, Humanity or Social Science?
- After World War II technology became increasingly important in society and as a result nomothetic based sciences gained popularity and prominence

Debate raged predominantly (although not exclusively) in the U.S., where regional geography was the major philosophical school (European geography had never been uncomfortable with analytical methods).

All of these events presented a great threat to geography's position as an academic subject and thus geographers began seeking new methods to counter critique. Under the (somewhat misleading) banner of the scientific method, the quantitative revolution began.

The Revolution

The Quantitative Revolution began in the universities of Europe with the support of geographers and statisticians in both Europe and the United States. First emerging in the late 1950s and early 1960s, the Quantitative Revolution responded to the rising regional geography paradigm. Under the loosely defined banner of bringing 'scientific thinking' to geography, the quantitative revolution led to an increased use of computerized statistical techniques, in particular multivariate analysis, in geographical research. The newly adopted methods reflected an array of mathematical techniques that improved precision.

Some of the techniques that epitomize the quantitative revolution include:

- Descriptive statistics
- Inferential statistics
- Basic mathematical equations and models, such as gravity models
- Deterministic models, e.g. Von Thünen's and Weber's location models
- Stochastic models using concepts of probability

Proponents of quantitative geography tended to present it as bringing science to geography. In fact, the particular contribution of the quantitative revolution was the huge

faith placed in multivariate analysis and in particular methods associated with econometrics. It was also very strongly aligned with positive science and this would prove a major source of epistemological debate.

The overwhelming focus on statistical modelling would, eventually, be the undoing of the quantitative revolution. Many geographers became increasingly concerned that these techniques simply put a highly sophisticated technical gloss on an approach to study that was barren of theory. Other critics argued that it removed the 'human dimension' from a discipline that always prided itself on studying the human and natural world alike. As the 1970s dawned, the quantitative revolution came under direct challenge.

Post-revolution Geography

The greatest impact of the quantitative revolution was not the revolution itself but the effects that came afterwards in a form of the spread of positivist (post-positivist) thinking and counter-positivist responses.

The rising interest in the study of distance as a critical factor in understanding the spatial arrangement of phenomena during the revolution led to formulation of the first law of geography by Waldo Tobler. The development of spatial analysis in geography led to more applications in planning process and the further development of theoretical geography offered to geographical research a necessary theoretical background.

The greater use of computers in geography also led to many new developments in geomatics such as the creation and application of GIS and remote sensing. These new developments allowed geographers for the first time to assess complex models on a full-scale model and over space and time. The development of geomatics led to geography being reunited as the complexities of the human and natural environments could be assessed on new computable models. Further advances also led to a greater role of spatial statistics and modelling within geography. Eventually the quantitative revolution had its greatest impacts on the fields of physical, economic and urban geography.

The counter-positivist response from human geography was created in a form of behavioral, radical and humanistic geography.

The quantitative revolution also changed the structure of geography departments in the USA with many physical geographers being merged with geology departments or environmental science departments leaving the geography departments to become solely human geography oriented. Within the UK, there was a different response to the revolution with an increase of specialisation within the subject and ultimately the development of systematic geography with many subfields and branches.

Critical geography

Critical geography takes a critical theory (Frankfurt School) approach to the study and analysis of geography. The development of critical geography can be seen as one of the four major turning points in the history of geography (the other three being environmental determinism, regional geography and quantitative revolution). Though post-positivist approaches remain important in geography the critical geography arose as a critique of positivism introduced by quantitative revolution.

Two main schools of thought emerged from human geography and one existing school (**behavioural geography**) which made a brief comeback. Behavioural geography sought to counter the perceived tendency of quantitative geography to deal with humanity as a statistical phenomenon. It flourished briefly during the 1970s and sought to provide a greater understanding of how people perceived places and made locational decisions and sought to challenge mathematical models of society, in particular the use of econometric techniques. But the lack of a sound theoretical base left behavioural geography open to critique as merely descriptive and amounting to little more than a listing of spatial preferences.

Radical geography emerged during the 1970s and 1980s as the inadequacies of behavioralist methods became clear. It sought to counter the postivist quantitative methods with normative techniques drawn from Marxist theory: quantitative methods, it argued, were not useful unless alternatives or solutions were given to problems.

The final and, arguably, most successful of the three schools was **humanistic geography**, initially formed part of behavioural geography but fundamentally disagreed with the use of quantitative methods in assessing human behaviour and thoughts in favour of qualitative analysis. Humanistic geography used many of the techniques that the humanities use such as source analysis and the use of text and literature to try to 'get into the mind' of the subject(s). Furthermore, Cultural geography revived due to humanistic geography new areas of study such as Feminist geography, postmodernist and poststructuralist geography began to emerge.

Chapter-2

Cultural and Health Geography

Cultural Geography

Cultural geography is a sub-field within human geography. Cultural geography is the study of cultural products and norms and their variations across and relations to spaces and places. It focuses on describing and analyzing the ways language, religion, economy, government and other cultural phenomena vary or remain constant, from one place to another and on explaining how humans function spatially.

Areas of study

Globalization and Mall Culture in Jakarta

The areas of study of cultural geography are very broad. Among many applicable topics within the field of study are:

- Globalization has been theorised as an explanation for cultural convergence.
- Westernization or other similar processes such as modernization, americanization, islamization and others.
- Theories of cultural hegemony or cultural assimilation via cultural imperialism.
- Cultural areal differentiation, as a study of differences in way of life encompassing ideas, attitudes, languages, practices, institutions and structures of power and whole range of cultural practices in geographical areas.
- Study of cultural landscapes.
- Other topics include spirit of place, colonialism, post-colonialism, internationalism, immigration, emigration and ecotourism.

History

Though the first traces of the study of different nations and cultures on Earth can be dated back to ancient geographers such as Ptolemy or Strabo, cultural geography as academic study firstly emerged as an alternative to the environmental determinist theories of the early Twentieth century, which had believed that people and societies are controlled by the environment in which they develop. Rather than studying pre-determined regions based upon environmental classifications, cultural geography became interested in cultural landscapes. This was led by Carl O. Sauer (called the father of cultural geography), at the University of California, Berkeley. As a result, cultural geography was long dominated by American writers.

Sauer defined the landscape as the defining unit of geographic study. He saw that cultures and societies both developed out of their landscape, but also shaped them too. This interaction between the 'natural' landscape and humans creates the 'cultural landscape'. Sauer's work was highly qualitative and descriptive and was surpassed in the 1930s by the regional geography of Richard Hartshorne, followed by the quantitative revolution. Cultural geography was generally sidelined, though writers such as David Lowenthal continued to work on the concept of landscape.

In the 1970s, the critique of positivism in geography caused geographers to look beyond the quantitative geography for its ideas. One of these re-assessed areas was also cultural geography.

New cultural geography

Since the 1980s, a "new cultural geography" has emerged, drawing on a diverse set of theoretical traditions, including Marxist political-economic models, feminist theory, post-colonial theory, post-structuralism and psychoanalysis.

Drawing particularly from the theories of Michel Foucault and performativity in western academia, and the more diverse influences of postcolonial theory, there has been a concerted effort to deconstruct the cultural in order to make apparent the various power relations. A particular area of interest is that of identity politics and construction of identity.

Examples of areas of study include:

- Feminist geography
- Children's geographies
- Some parts of Tourism geography
- Behavioral geography
- Sexuality and space
- Some more recent developments in Political geography

Some within the 'new cultural geography' have turned their attention to critiquing some of its ideas, seeing its views on identity and space as static. It has followed the critiques of Foucault made by other 'poststructuralist' theorists such as Michel de Certeau and Gilles Deleuze. In this area, non-representational geography and population mobility research have dominated. Others have attempted to incorporate these critiques back into the new cultural geography.

Children's geographies

Children's geographies is an area of study in human geography, studying the places and spaces of children's lives.

Children's geographies is that branch of human geography which deals with the study of places and spaces of children's lives, characterised experientially, politically and ethically.

Ever since the cultural turn in geography, there has been recognition that society is not homogenous but heterogeneous. It is characterized by diversity, differences and subjectivities. While feminist geographers had been able to strengthen the need for examination of gender, class and race as issues affecting women, 'children' as an umbrella term encompassing children, teenagers, youths and young people, which are still relatively missing as a 'frame of reference' in the complexities of 'geographies'. In the act of theorizing children and their geographies, the ways of doing research and the assumed ontological realities often "frame 'children' and 'adults' in ways that impose a bi-polar, hierarchical, and developmental model". This reproduces and enforces the hegemony of adult-centered discourses of children within knowledge production. Children's geographies has developed in academic human geography since the beginning of the 1990s, although there were notable studies in the area before that date. The earliest work done on children's geographies largely can be traced to William Bunge's work on spatial

oppression of children in Detroit and Toronto where children are deemed as the ones who suffer the most under an oppressing adult framework of social, cultural and political forces controlling the urban built environment.

This development emerged from the realisation that previously human geography had largely ignored the everyday lives of children, who (obviously) form a significant section of society, and who have specific needs and capacities, and who may experience the world in very different ways. Thus children's geographies can in part be seen in parallel to an interest in gender in geography and feminist geography in so much as their starting points were the gender blindness of mainstream academic geography.

Children's geographies rests on the idea that children as a social group share certain characteristics which are experientially, politically and ethically significant and which are worthy of study. The pluralisation in the title is intended to imply that children's lives will be markedly different in differing times and places and in differing circumstances such as gender, family, and class.The current developments in children's geographies are attempting to link the frame of analysing children's geographies to one that requires multiple perspectives and the willingness to acknowledge the 'multiplicity' of their geographies.

Children's geographies is sometimes coupled with, and yet distinguished from the geographies of childhood. The former has an interest in the everyday lives of children; the latter has an interest in how (adult) society conceives of the very idea of childhood and how this impinges on children's lives in many ways. This includes imaginations about the nature of children and the related (spatial) implications.

There are a whole range of focii with children's geographies including children and the city, children and the countryside, children and technology, children and nature, children and globalisation, methodologies of researching children's worlds and the ethics of doing so.

There is now a Journal of Children's Geographies which will give readers a good idea of the growing range of issues, theories and methodologies of this developing and vibrant sub-discipline.

Animal geographies

Animal geographies is an area of study in geography, studying the spaces and places occupied by animals in human culture.

An interest in animal geographies emerged in human geography in the mid 1990s. This was marked by a special edition of the journal *Environment and Planning D: Society and Space* in 1995 and a book by Jennifer Wolch and Jody Emel called *Animal Geographies: place, politics and identity in the nature-culture borderlands* published in 1998.

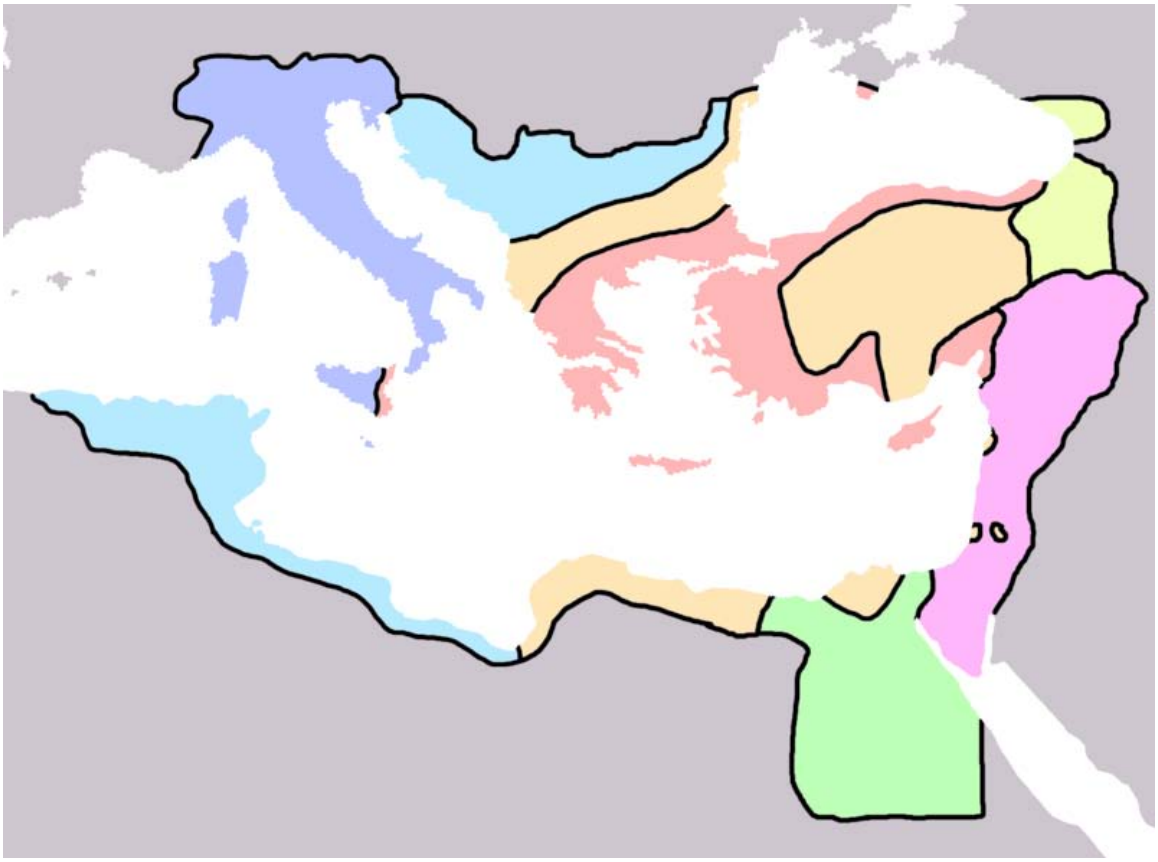
This movement was prompted by the basic fact that social life and space is heavily populated by animals of many differing kinds and in many differing ways (e.g. farm animals, pets, wild animals in the city). It was also prompted by ecofeminist and other environmentalist viewpoints on nature-society relations (including questions of animal welfare and rights).

This sub-discipline within human geography quickly developed, another landmark being the book *Animal Spaces, Beastly Places: New Geographies of Human-Animal Relations*.

Papers regularly come out in a number of geographical journals and in journals such as *Society and Animals*.

Animal geographies is now part of a wider interest of non-human or 'more-than-human' geographies which pays close attention not only to animals but all the things, living and non-living, that help to make up the everyday ‘social’ world and its spaces and places.

Language geography



A map of the language divisions within Justinian I's Byzantine Empire. Greek Greek and native Latin Latin and native Aramaic Coptic Caucasian

Language geography is the branch of human geography that studies the geographic distribution of language or its constituent elements. There are two principal fields of study within the geography of language: the "geography of languages", which deals with the distribution through history and space of languages, and "linguistic geography", which deals with regional linguistic variations within languages. Various other terms and subdisciplines have been suggested, including; a division within the examination of linguistic geography separating the studies of change over time and space; 'geolinguistics', a study within the geography of language concerned with 'the analysis of the distribution patterns and spatial structures of languages in contact', but none have gained much currency.

Many studies have researched the effect of 'language contact', as the languages or dialects of peoples have interacted. This territorial expansion of language groups has usually resulted in the overlaying of languages upon existing speech areas, rather than the replacement of one language by another. An example could be sought in the Norman Conquest of England, where Old French became the language of the aristocracy, and Middle English remained the language of the majority of the population.

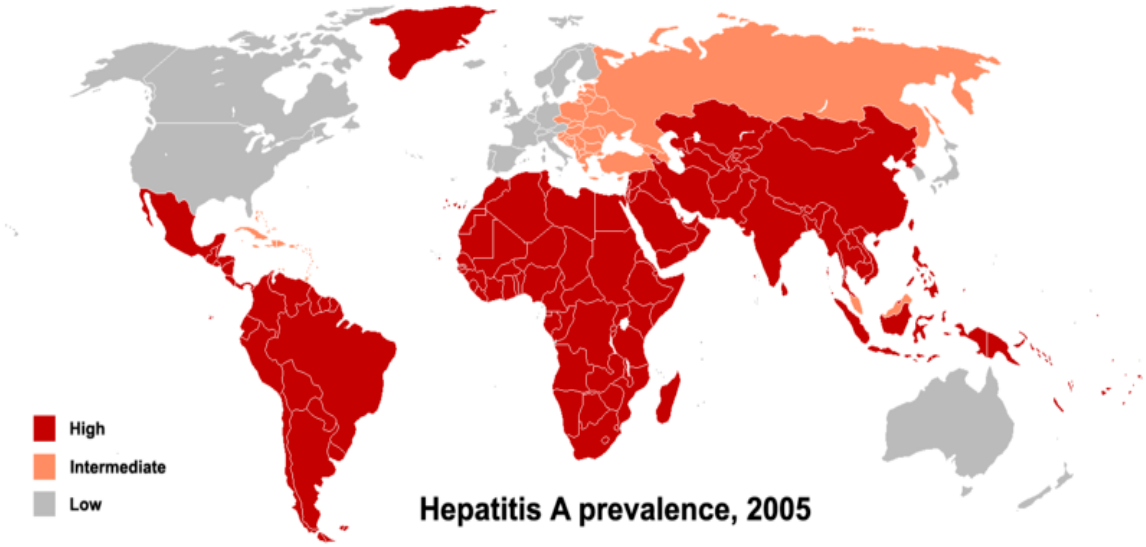
Linguistic geography, as a field, is dominated by linguists rather than geographers. Charles Withers describes the difference as resulting from a focus on "elements of language, and only then with their geographical or social variation, as opposed to investigation of the processes making for change in the extent of language areas." To quote Trudgill, "linguistic geography has been geographical only in the sense that it has been concerned with the spatial distribution of linguistic phenomena." In recent times greater emphasis has been laid upon explanation rather than description of the patterns of linguistic change. The move has paralleled similar concerns in geography and language studies. These studies have paid attention to the social use of language, and to variations in dialect within languages in regard to social class or occupation. Regarding such variations, lexicographer Robert Burchfield notes that their nature "is a matter of perpetual discussion and disagreement". As an example, he notes that "most professional linguistic scholars regard it as axiomatic that all varieties of English have a sufficiently large vocabulary for the expression of all the distinctions that are important in the society using it." He contrasts this with the view of the historian Professor John Vincent, who regards such a view as

> " "a nasty little orthodoxy among the educational and linguistic establishment. However badly you need standard English, you will have the merits of non-standard English waved at you. The more extravagantly your disadvantages will be lauded as 'entirely adequate for the needs of their speakers', to cite the author of *Sociolinguistics*. It may sound like a radical cry to support pidgin, patois, or dialect, but translated into social terms, it looks more like a ploy to keep Them (whoever Them may be) out of the middle-class suburbs." "
>
> — John Vincent, The Times

Burchfield concludes that "Resolution of such opposite views is not possible", though the "future of dialect studies and the study of class-marked distinctions are likely to be of considerable interest to everyone".

In England, linguistic geography has traditionally focussed upon rural English, rather than urban English. A common production of linguistic invesigators of dialects is the shaded and dotted map showing where one linguistic feature ends and another begins or overlaps. Various compilations of these maps for England have been issued over the years, including Joseph Wright's *English Dialect Dictionary* (1896-1905), the *Survey of English Dialects* (1962-8), and *The Linguistic Atlas of England* (1978).

Health geography



Hepatitis A prevalence worldwide, 2005

Health geography is the application of geographical information, perspectives, and methods to the study of health, disease, and health care.

Overview

Adopting a socio-ecological rather than the bio-medical model, health geography adopts a more holistic approach, emphasizing treatment of the whole person and not just components of the system. Under this model, new illnesses (e.g., mental ill health) are recognised, and other types of medicine (e.g., complementary or alternative medicine) are combined with traditional medicine.

This alternative methodological approach means that medical geography is broadened to incorporate philosophies such as structuration, structuralism, social interactionism, feminism, et cetera. Thus the field of health geography was born.

History of health geography

A classic piece of research in health geography was done in 1854 as cholera gripped London. Death tolls rang around the clock and the people feared that they were being infected by vapors coming from the ground. Dr. John Snow thought that if he could locate the source of the disease, it could be contained. He drew maps showing the homes of people who had died of cholera and the locations of water pumps. He found that one pump, the public pump on Broad Street, was central to most of the victims. He figured that infected water from the pump was the culprit. He instructed the authorities to remove the handle to the pump, making it unusable. After that the number of new cholera cases decreased.

Areas of study

Health geography can provide a spatial understanding of a population's health, the distribution of disease in an area, and the environment's effect on health and disease. deals also with accessibility to health care and spatial distribution of health care providers. The study is considered a subdiscipline of human geography, however, it requires an understanding of other fields such as epidemiology, climatology.

Geography of Health Care Provision

Although health care is a public good, it is not 'pure'. In other words, it is not equally available to all individuals. The geography of health care provision has much to do with this. Demand for public services is continuously distributed across space, broadly in accordance with the distribution of population, but these services are only provided at discrete locations. Inevitably therefore, there will be inequalities of access in terms of the practicality of using services, transport costs, travel times and so on. Geographical or 'locational' factors (e.g. physical proximity, travel time) are not the only aspects which influence access to health care. Other types (or dimensions) of accessibility to health care except for geographical (or spatial) are social, financial and functional. *Social* accessibility to health care depends on race (like separate hospitals for white and black people), age, sex and other social characteristics of individuals, important here is also relationship between patient and the doctor. *Financial* depends upon the price of a particular health care and *functional* reflects the amount and structure of provided services. This can vary among different countries or regions of the world. Access to health care is influenced also by factors such as opening times and waiting lists that play an important part in determining whether individuals or population sub-groups can access health care – this type of accessibility is termed 'effective accessibility'.

The location of health care facilities depends largely on the nature of the health care system in operation, and will be heavily influenced by historical factors due to the heavy investment costs in facilities such as hospitals and surgeries. Simple distance will be mediated by organisational factors such as the existence of a referral system by which patients are directed towards particular parts of the hospital sector by their GP. Access to primary care is therefore a very significant component of access to the whole system. In a 'planned' health care system, we would expect the distribution of facilities to fairly closely match the distribution of demand. By contrast, a market-oriented system might mirror the locational patterns that we find in other business sectors, such as retail location. We may attempt to measure either *potential accessibility* or *revealed accessibility*, but we should note that there is a well-established pattern of utilisation increasing with access, i.e. people who have easier access to health care use it more often.

Health Geographers

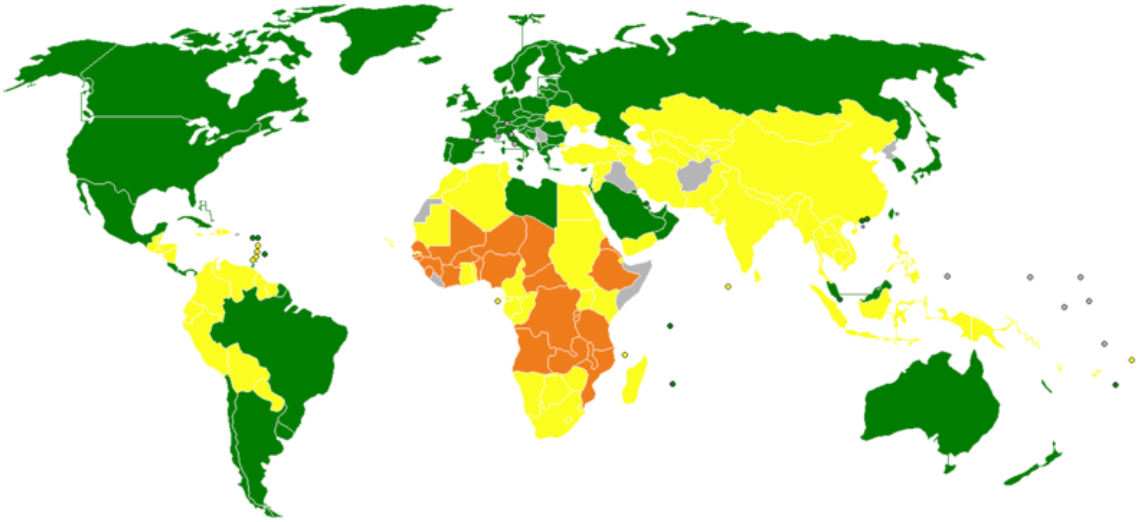
Notable Health Geographers Include:

- Jonathan Mayer
- Melinda Meade
- Ellen Cromley
- Anthony C. Gatrell
- Jim Dunn
- Robin Kearns
- Sara McLafferty
- Graham Moon
- Gerard Rushton
- Nancy Ross
- W.F. (Ric) Skinner

Chapter-3

Development and Urban Geography

Development Geography



High human development Medium human development Low human development Unavailable(colour-blind compliant map)

Development geography is the study of the earth's geography with reference to the standard of living and quality of life of its human inhabitants. In this context, development is a process of change that affects people's lives. It may involve an improvement in the quality of life as perceived by the people undergoing change. However, development is not always a positive process. Gunder Frank commented on the global economic forces that lead to the development of underdevelopment. This is covered in his dependency theory.

In development geography, geographers study spatial patterns in development. They try to find by what characteristics they can measure development by looking at economic, political and social factors. They seek to understand both the geographical causes and

consequences of varying development. Studies compare More Economically Developed Countries (MEDCs) with Less Economically Developed Countries (LEDCs). Additionally variations within countries are looked at such as the differences between northern and southern Italy, the Mezzogiorno.

Within development geography, sustainable development is also studied in an attempt to understand how to meet the needs of the present without compromising the needs of future generations to meet their own needs.

Quantitative indicators

Quantitative indicators are numerical indications of development.

- Economic indicators include GNP (Gross National Product) per capita, unemployment rates, energy consumption and percentage of GNP in primary industries. Of these, GNP per capita is the most used as it measures the value of all the goods and services produced in a country, excluding those produced by foreign companies, hence measuring the economic and industrial development of the country. However, using GNP per capita also has many problems.
    - It does not take into account the distribution of the money which can often be extremely unequal as in the UAE where oil money has been collected by a rich elite and has not flowed to the bulk of the country.
    - GNP does not measure whether the money produced is actually improving people's lives and this is important because in many MEDCs where there are large increases in wealth over time but only small increases in happiness.
    - The figure rarely takes into account the unofficial economy, which includes subsistence agriculture and cash-in-hand or unpaid work, which is often substantial in LEDCs. In LEDCs it is often too expensive to accurately collect this data and some governments intentionally or unintentionally release inaccurate figures.
    - The figure is usually given in US dollars which due to changing currency exchange rates can distort the money's true street value so it is often converted using purchasing power parity (PPP) in which the actual comparative purchasing power of the money in the country is calculated.
- Social indications include access to clean water and sanitation (which indicate the level of infrastructure developed in the country) and adult literacy rate, measuring the resources the government has to meet the needs of the people.
- Demographic indicators include the birth rate, death rate and fertility rate, which indicate the level of industrialization.
    - Health indicators (a sub-factor of demographic indicators) include nutrition (calories per day, calories from protein, percentage of population with malnutrition), infant mortality and population per doctor, which indicate the availability of healthcare and sanitation facilities in a country.
- Environmental indications include how much a country does for the environment.

Composite indicators

Composite or qualitative indicators combine several quantitative indicators into one figure and generally provide a more balanced view of a country. Usually they include one economic, one social and one demographic indicator.

- The HDI (Human Development Index) is now the most widely used composite indicator. A number is calculated between 0 and 1 taking into account the most important measures: GNP per capita, the adult literacy rate, the school enrollment rate and life expectancy. It was started by the United Nations in 1990 to replace GNP as a more accurate way of measuring development. A HDI between 1 and 0.8 is considered high, 0.8 and 0.6 is considered medium and 0.6 to 0.4 is considered low.

Data Example

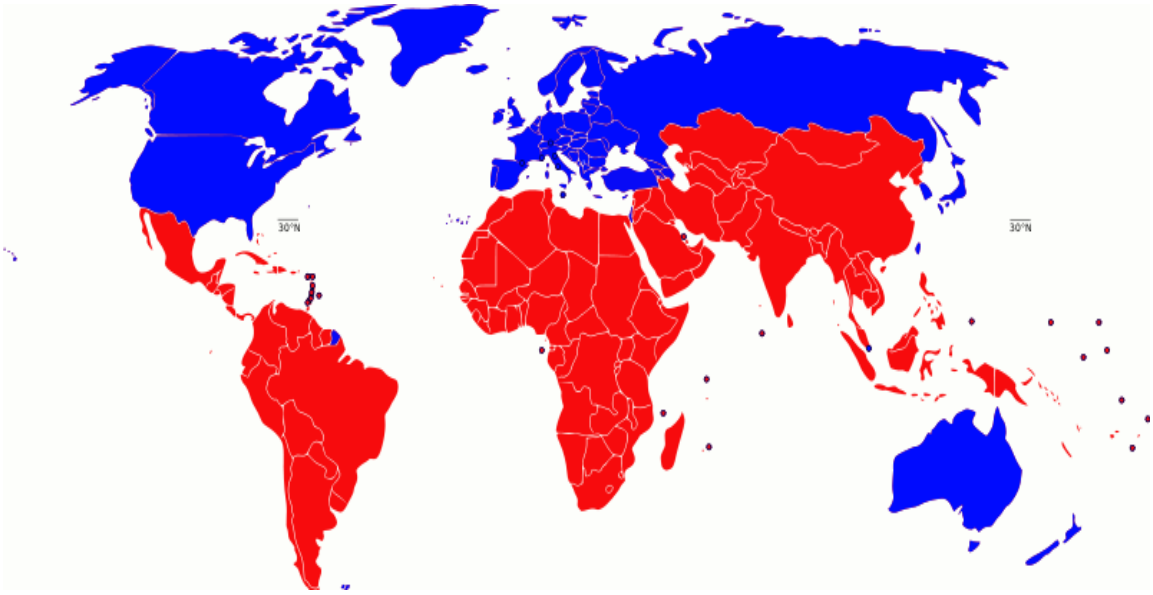
HDI rank	Country	GDP per capita (PPP US$) 2008	Human development index (HDI) value 2006
4	Australia	35,677	0.965
70	Brazil	10,296	0.807
151	Zimbabwe	188	0.513

- In the table above GDP stands for gross domestic product, which is generally taken to be equal to GNP.
- Other composite measures include the PQLI (Physical Quality of Life Index) which was a precursor to the HDI which used infant mortality rate instead of GNP per capita and rated countries from 0 to 100. It was calculated by assigning each country a score of 0 to 100 for each indicator compared with other countries in the world. The average of these three numbers makes the PQLI of a country.
- The HPI (Human Poverty Index) is used to calculate the percentage of people in a country who live in relative poverty. In order to better differentiate the number of people in abnormally poor living conditions the HPI-1 is used in developing countries, and the HPI-2 is used in developed countries. The HPI-1 is calculated based on the percentage of people not expected to survive to 40, the adult illiteracy rate, the percentage of people without access to safe water, health services and the percentage of children under 5 who are underweight. The HPI-2 is calculated based on the percentage of people who do not survive to 60, the adult functional illiteracy rate and the percentage of people living below 50% of median personal disposable income.
- The GDI (Gender-related Development Index) measures gender equality in a country in terms of life expectancy, literacy rates, school attendance and income.

Qualitative indicators

Qualitative indicators include descriptions of living conditions and people's quality of life. They are useful in analysing features that are not easily calculated or measured in numbers such as freedom, corruption or security, which are mainly non-material benefits.

Geographic variations in development



The updated view of the north-south divide. Blue includes G8 nations, developed / first world nations, and Europe

There is a considerable spatial variation in development rates.

Global wealth also increased in material terms, and during the period 1947 to 2000, average per capita incomes tripled as global GDP increased almost tenfold (from $US3 trillion to $US30 trillion)... Over 25% of the 4.5 billion people in LEDCs still have life expectancies below 40 years. More than 80 countries have a lower annual per capita income in 2000 than they did in 1990. The average income in the world's five richest countries is 74 times the level in the world's poorest five, the widest it has ever been. Nearly 1.3 billion people have no access to clean water. About 840 million people are malnourished.
—Stephen Codrington

The most famous pattern in development is the North-South divide. The North-South divide is the divide which separates the rich North or the developed world, from the poor South. This line of division is not as straightforward as it sounds and splits the globe into two main parts. It is also known as the Brandt Line.

The "North" in this divide is regarded as being North America, Europe, Russia, South Korea, Japan, Australia, New Zealand and the like. The countries within this area are generally the more economically developed. The "South" therefore encompasses the remainder of the Southern Hemisphere, mostly consisting of LEDCs. Another possible dividing line is the Tropic of Cancer with the exceptions of Australia and New Zealand. It is critical to understand that the status of countries is far from static and the pattern is likely to become distorted with the fast development of certain southern countries, many of them NICs (Newly Industrialised Countries) including India, Thailand, Brazil, Malaysia, Mexico and others. These countries are experiencing sustained fast development on the back of growing manufacturing industries and exports.

Most countries are experiencing significant increases in wealth and standard of living. However there are unfortunate exceptions to this rule. Noticeably some of the former Soviet Union countries has experienced major disruption of industry in the transition to a market economy. Many African nations have recently experienced reduced GNPs due to wars and the AIDS epidemic, including Angola, Congo, Sierra Leone and others. Arab oil producers rely very heavily on oil exports to support their GDPs so any reduction in oil's market price can lead to rapid decreases in GNP. Countries which rely on only a few exports for much of their income are very vulnerable to changes in the market value of those commodities and are often derogatively called banana republics. Many developing countries do rely on exports of a few primary goods for a large amount of their income (coffee and timber for example), and this can create havoc when the value of these commodities drops, leaving these countries with no way to pay off their debts.

Within countries the pattern is that wealth is more concentrated around urban areas than rural areas. Wealth also tends towards areas with natural resources or in areas that are involved in tertiary (service) industries and trade. This leads to a gathering of wealth around mines and monetary centres such as New York, London and Tokyo.

Aid

MEDCs (More Economically Developed Countries)can give aid to LEDCs (Less Economically Developed Countries). There are several types of aid:

- Governmental(Bilateral) aid
- International Organizational (multilateral) aid
- Voluntary aid
- Short-term/emergency aid
- Long-term/sustainable aid

Aid can be given in several ways. Through money, materials, or skilled and learned people (e.g. teachers).

Aid has advantages. Mostly short-term or emergency aid help people in LEDCs to survive a natural (earthquake, tsunami, volcano eruption etc.) or human (civil war etc.)

disaster. Aid helps make the recipient country (the country that receives aid) get more developed.

However, aid also has disadvantages. Often aid does not even reach the poorest people. Often money gained from aid is used up to make infrastructures (briges, roads etc.), which only the rich can use. Also, the recipient country gets more dependant of aid from a donor country (the country giving aid).

Urban Geography

New York City, one of the largest urban areas in the world

Urban geography is the study of urban areas. That is the study of areas which have a high concentration of buildings and infrastructure. These are areas where the majority of economic activities are in the secondary sector and tertiary sectors. They often have a high population density.

Urban geography is that branch of science, which deals the study of urban areas, in terms of concentration, infrastructure, economy, and environmental impacts.

It can be considered a part of the larger field of human geography. However, it can often overlap with other fields such as anthropology and urban sociology. Urban geographers seek to understand how factors interact over space, what function they serve and their interrelationships. Urban geographers also look at the development of settlements. Therefore, it involves planning city expansion and improvements. Urban geography, then, attempts to account for the human and environmental impacts of the change. Urban geography focuses on the city in the context of space throughout countries and continents.

Urban geography forms the theoretical basis for a number of professions including urban planning, site selection, real estate development, crime pattern analysis and logistical analysis.

Areas of Study

There are essentially two approaches to urban geography. The study of problems relating to the spatial distribution of cities themselves and the complex patterns of movement, flows and linkages that bind them in space. Studies in this category are concerned with the *city system*. Secondly there is the study of patterns of distribution and interaction within cities, essentially the study of their inner structure. Studies in this category are concerned with the *city as a system*. A succinct way to define urban geography that recognizes the link between these two approaches within the subject is then, that "urban geography is the study of cities as systems within a system of cities."

Site and situation

Site describes the location of a city with respect to its soil, water supply and relief, or more still the actual point on which a settlement is built while situation describes the surrounding area of the city such as other settlements, rivers, mountains and communication. Locations for cities are usually chosen for good reasons. Benefits of certain locations can include:

- A wet area: water is a constant necessity for urban areas and is difficult to transport. For this reason many cities are located near or adjacent to rivers.
- A dry area: in wet areas a dry area offers protection from flooding and marshland.
- Easy access to building materials: stone, wood or clay are necessary for the construction of cities and are difficult to transport long distances.
- A strategic defensive position: historically many cities have been constructed on high ground in order to make attack more difficult and to give a good view of surrounding land (for example, Quebec City). River meanders are also used as partial moats. Some cities were also built in swampy areas for the same reason (for example, Paris).

- fuel supply: most cities were initially constructed near wood for burning and cooking. Today many cities are constructed near coal, oil and gas mines to make use of those resources (for example: Newcastle, Glasgow, Pittsburgh, Essen).
- A food supply: cities need some nearby land to be suitable for animal grazing or crop growing
- A travel intersection point and bridging points: it is often useful for a city to be located at the intersection of rivers, roads or train lines in order to facilitate travel and trade. Bridging points are shallow areas that allow easy construction of bridges, (for example: London, Cologne).
- Historically many cities grew at so-called "break-of-bulk" points along navigable rivers, where a local obstacle such as rapids required trade goods to be trans-shipped from larger boats to smaller boats, for example: Chicago, Montreal.
- Shelter and aspect: it is desirable to construct cities located on the side of a slope that is protected from incoming winds, and in a direction that receives maximum sun exposure.

Cities as Centers of Manufacturing and Services

Cities differ in their economic makeup, their social and demographic characteristics and the roles they play within the city system. These differences can be traced back to regional variations in the local resources on which growth was based during the early development of the urban pattern and in part the subsequent shifts in the competitive advantage of regions brought about by changing locational forces affecting regional specialization within the framework of the market economy. Recognition of different city types necessitates their classification, and it is to this important aspect of urban geography that we now turn. Emphasis is on *functional town classification* and the basic underlying dimensions of the city system.

The purpose of classifying cities is twofold. On the one hand, it is undertaken in order to search reality for hypotheses. In this context, the recognition of different types of cities on the basis of, for example, their functional specialization may enable the identification of spatial regularities in the distribution and structure of urban functions and the formulation of hypotheses about the resulting patterns. On the other hand, classification is undertaken to structure reality in order to test specific hypotheses that have already been formulated. For example, to test the hypotheses that cities with a diversified economy grow at a faster rate then those with a more specialized economic base, cities must first be classified so that diversified and specialized cities can be differentiated.

The simplest way to classify cities is to identify the distinctive role they play in the city system. There are three distinct roles. 1. *Central places* functioning primarily as service centers for local hinterlands. 2. *Transportation* cities performing break-of-bulk and allied functions for larger regions. 3. *Specialized-function* cities are dominated by one activity such as mining, manufacturing or recreation and serving national and international markets. The composition of a cities labor force has traditionally been regarded as the best indicator of functional specialization, and different city types have been most

frequently identified from the analysis of employment profiles. Specialization in a given activity is said to exist when employment in it exceeds some critical level.

The relationship between the city system and the development of manufacturing has become very apparent. The rapid growth and spread of cities within the heartland-hinterland framework after 1870 was conditioned to a large extent by industrial developments and that the decentralization of population within the urban system in recent years is related in large part to the movement of employment in manufacturing away from the traditional industrial centers. Manufacturing is found in nearly all cities, but its importance is measured by the proportion of total earnings received by the inhabitants of an urban area. When 25 percent or more of the total earnings in an urban region are derived from manufacturing, that urban areas is arbitrarily designated as a manufacturing center.

The location of manufacturing is affected by myriad economic and non-economic factors, such as the nature of the material inputs, the factors of production, the market and transportation costs. Other important influences include agglomeration and external economies, public policy and personal preferences. Although it is difficult to evaluate precisely the effect of the market on the location of manufacturing activities, two considerations are involved: the nature of and demand for the product and transportation costs.

Chapter-4

Economic and Tourism Geography

The coffee trade is a worldwide industry

Economic geography is the study of the location, distribution and spatial organization of economic activities across the world. The subject matter investigated is strongly influenced by the researcher's methodological approach. Neoclassical location theorists, following in the tradition of Alfred Weber, tend to focus on industrial location and use quantitative methods. Since the 1970s, two broad reactions against neoclassical approaches have significantly changed the discipline: Marxist political economy, growing out of the work of David Harvey; and the new economic geography which takes into account social, cultural, and institutional factors in the spatial economy.

Economic geography is usually regarded as a subfield of the discipline of geography, although recently economists such as Paul Krugman and Jeffrey Sachs have pursued interests that can be considered part of economic geography. Krugman has gone so far as to call his application of spatial thinking to international trade theory the "new economic geography", which directly competes with an approach within the discipline of geography that is also called "new economic geography". The name geographical economics has been suggested as an alternative.

Given the variety of approaches, economic geography has taken to many different subject matters, including: the location of industries, economies of agglomeration (also known as "linkages"), transportation, international trade and development, real estate, gentrification, ethnic economies, gendered economies, core-periphery theory, the economics of urban form, the relationship between the environment and the economy (tying into a long history of geographers studying culture-environment interaction), and globalization. This list is by no means exhaustive.

Approaches to study

As the economic geography is a very broad discipline with economic geographers using many different methodologies in the study of economic phenomena in the world some distinct approaches to study have evolved over time:

- *Theoretical economic Geography* focuses on building theories about spatial arrangement and distribution of economic activities.
- *Regional economic geography* examines the economic conditions of particular regions or countries of the world. It deals with economic regionalization, and local economic development as well.
- *Historical economic geography* examines history and the development of spatial economic structure. Using historical data it examines how the centers of population and economic activity shift, what patterns of regional specialization and localization evolved over time and what factors explain these changes.
- *Critical economic geography* is approach from the point of view of contemporary critical geography and its philosophy.
- *Behavioral economic geography* which examines the cognitive processes underlying spatial reasoning, locational decision making, and behavior of firms and individuals.

Branches

Thematically economic geography can be divided into these sub disciplines:

- 'Geography of Agriculture'
- 'Geography of Industry'
- 'Geography of International Trade'
- 'Geography of Resources'

- 'Geography of Transport and Communication'
- and others

However, their areas of study may overlap with another geographical sciences or may be considered on their own.

History of economic geography

In the history of economic geography there were many influences coming mainly from economics and geographical sciences.

First traces of the study of spatial aspects of economic activities can be found in seven Chinese maps of the State of Qin dating to the 4th century BC. Ancient writings can attributed to Greek Strabo's *Geographika* compiled almost 2000 years ago.

A few centuries ago, there were developed many of the aspects used today in Economic Geography. This process originated in the secret maps created across different powers in Europe, locating the products they could find in colonies in the Americas, Africa and Asia, or where they had trading interests.

During the period known in geography as environmental determinism notable (though later much criticized) influence came from Ellsworth Huntington and his theory of climatic determinism.

Valuable contributions came from location theorists such as Johann Heinrich von Thünen or Alfred Weber. Other influential theories were Walter Christaller's Central place theory, the theory of core and periphery.

Fred K. Schaefer's article *Exceptionalism in geography: A Methodological Examination* published in American journal Annals (Association of American Geographers) and his critique of regionalism had a big impact on economic geography. The article became a rallying point for the younger generation of economic geographers who were intent on reinventing the discipline as a science. Quantitative methods became prevailing in research. Well-known economic geographers of this period are William Garrison, Brian Berry, Waldo Tobler, Peter Haggett, William Bunge and others.

Contemporary economic geographers tend to specialize in areas such as location theory and spatial analysis (with the help of geographic information systems), market research, geography of transportation, land or real estate price evaluation, regional and global development, planning, Internet geography, innovation, social networks and others.

Economists and economic geographers

Economists and economic geographers differ in their methods in approaching similar economic problems in several ways. To generalize, an economic geographer will take a

more holistic approach in the analysis of economic phenomena, which is to conceptualize a problem in terms of space, place and scale as well as the overt economic problem that is being examined. The economist approach, according to economic geographers, has four main drawbacks or manifestations of "economic orthodoxy that tends to homogenize the economic world in way that economic geographers try to avoid (Coe *et al*. p.10)".

Geo (marketing)

As a general term, Geomarketing is the integration of Geographical intelligence into all marketing aspects including sales and distribution. Geomarketing Research is the use of geographic parameters in research methodology starting from sampling, data collection, analysis, and presentation. Geomarketing Services are more related to routing, territorial planning, and site selection whereas the location is the key factor for such disciplines. The core base of Geomarketing is the digital map; it can either make or break the concept. Equally important, though, is the association of data with these maps using some place-based component.

In marketing, **geo** (also called **marketing geography** or **geomarketing**) is a discipline within marketing analysis which uses geolocation (geographic information) in the process of planning and implementation of marketing activities. It can be used in any aspect of the marketing mix – the Product, Price, Promotion, or Place (geo targeting). Market segments can also correlate with location, and this can be useful in targeted marketing. The methodology geomarketing is successfully applied in the financial sector through identifying ATMs traffic generators and creating hotspots maps based on geographical parameters integrated with customer behavior.

Geomarketing has a direct impact on the development of modern trade and the reorganization of retail types. Site selection becomes automated and based on scientific procedures that saves both time and money. Geomarketing uses key facts, a good base map, proper data layers, reliable consumer profiling, and proper success/fail criteria.

GPS tracking and GSM localization can be used to obtain the actual position of the travelling customer.

Geo marketing software

Geolocation software is used to display data that can be linked to a geographic region or area. It can be used to:

- Recommend nearby social events.
- Determine where the customers are (on country, city, street or user level).
- Determine who the customer is (on organisation or user level), or make a guess on it based on earlier encounters by tracking IP address, credit card information, VOIP address, etc.
- Visualize any data in a geographic context by linking it to a digital map.
- Locate a web client's computer on a digital map.

- Calculate summary information for specific areas.
- Select customers within specific areas.
- Select customers with a certain radius of a point.
- Using micro-geographic segmentation select customers similar to a specific type in the rest of the country.

Some of the software used includes MapInfo, ArcGIS (ESRI), RegioGraph (GfK), assorted open source like Mapwindow, DIVA (which while normally used for bio-diversity creates very visually pleasing density maps), GRASS (which works in Linux and Windows environments). Several other software are available. Indeed Google Earth provides an excellent set of images that are always useful.

Some Applications for Geo

Different content by choice

A typical example for different web content by choice in geo marketing and geo targeting is the FedEx website where users have the choice to select their country location first and are then presented with different site or article content depending on their selection.

Automated different content

With automated different content in internet marketing and geomarketing the delivery of different content based on the geographical geolocation and other personal information is automated.

Other

- Solve problems regarding location of a new retail outlet
- Map consumer demand trends to best distribute products and advertising. This links with trade zone management.
- Scope digital advertising towards individual consumers.
- Research consumer shopping patterns and observe traffic within shopping centers and between retail outlets. It also helps in visualisation of market research findings and help improve the overall planning ability of organisations.
- Improve customer cooperation.

Tourism geography

Tourists at Niagara Falls.

Tourism Geography is the study of travel and tourism, as an industry and as a social and cultural activity. Tourism geography covers a wide range of interests including the environmental impact of tourism, the geographies of tourism and leisure economies, answering tourism industry and management concerns and the sociology of tourism and locations of tourism.

Tourism geography is that branch of science which deals with the study of travel and its impact on places.

Geography is fundamental to the study of tourism, because tourism is geographical in nature. Tourism occurs in places, it involves movement and activities between places and it is an activity in which both place characteristics and personal self-identities are formed, through the relationships that are created among places, landscapes and people. Physical geography provides the essential background, against which tourism places are created and environmental impacts and concerns are major issues, that must be considered in managing the development of tourism places.

The approaches to study will differ according to the varying concerns. Much tourism management literature remains quantitative in methodology and considers tourism as consisting of the places of tourist origin (or tourist generating areas), tourist destinations (or places of tourism supply) and the relationship (connections) between origin and destination places, which includes transportation routes, business relationships and traveler motivations. Recent developments in Human geography have resulted in approaches such as those from cultural geography, which take more theoretically diverse approaches to tourism, including a sociology of tourism, which extends beyond tourism as an isolated, exceptional activity and considering how travel fits into the everyday lives and how tourism is not only a consumptive of places, but also produces the sense of place at a destination.

Transportation geography

Spatial interaction in Dhaka

Transportation Geography is the branch of geography that investigates spatial interactions, let them be of people, freight and information. It can consider humans and their use of vehicles or other modes of travelling as well as how markets are serviced by flows of finished goods and raw materials. It is a branch of Economic geography.

"The ideal transport mode would be instantaneous, free, have an unlimited capacity and always be available. It would render space obsolete. This is obviously not the case. Space is a constraint for the construction of transport networks. Transportation appears to be an economic activity different from others. It trades space with time and thus money" (translated from [Merlin, 1992]).

Geography and transportation intersect in terms of the movement of peoples, goods, and information. Over time, accessibility has increased and this has led to a greater reliance on mobility. This trend could be traced back to the industrial revolution although it has significantly accelerated in the second half of the 20th century for various reasons. Today, societies rely on transport systems to support a wide variety of activities. These activities include commuting, supplying energy needs, distributing goods, and acquiring personal wants. The development of sufficient transport networks has been a continuous challenge to meet growing economic development, mobility needs, and ultimately to participate in the global economy.

Transport and urban geography are closely intertwined, with the concept of ribbon development being closely aligned to urban and transport studies. As humans increasingly seek to travel the world, the relationship transport and urban areas have often become obscured.

Transportation geography measures the result of human activity between and within locations. It focuses on items such as travel time, routes undertaken, modes of transport, resource use and sustainability of transport types on the natural environment. Other sections consider topography, safety aspects of vehicle use and energy use within an individual's or group's journey.

The purpose of transportation is to overcome space which is shaped by both human and physical constraints such as distance, political boundaries, time and topographies. The specific purpose of transportation is to fulfill a demand for mobility, since it can only exist if it moves something, be it people or goods. Any kind of movement must consider its geographical setting, and then choose an available form of transport based on cost, availability, and space.

Transportation Modes

In terms of transport modes, the primary forms are air, rail, road, and water. Each one has its own cost associated with; speed of movement as a result of friction, and the place of origin and destination. For moving large amounts of goods, ships are generally utilized. Maritime shipping is able to carry more at a cheaper price around the world. For moving people who prefer to minimize travel time, and maximize comfort and convenience, air

and road are the most common modes in usage. Rail road is often utilized to transport goods in areas away from water. Also water transportation is based upon early constructioning from railroad.

" Transportation modes are an essential component of transport systems since they are the means by which mobility is supported. Geographers consider a wide range of modes that may be grouped into three broad categories based on the medium they exploit: land, water and air. Each mode has its own requirements and features, and is adapted to serve the specific demands of freight and passenger traffic. This gives rise to marked differences in the ways the modes are deployed and utilized in different parts of the world. Recently, there is a trend towards integrating the modes through intermodality and linking the modes ever more closely into production and distribution activities. At the same time, however, passenger and freight activity is becoming increasingly separated across most modes."

Road Transportation

Transportation using road networks. are the type of transportation that are connected with movements on constructed roads, carrying people and goods from one place to another on the means of transportation like lorries, cars etc.

Rail Transportation

Transportation by use of rail, restricted to where rails have been built.

Maritime Transportation

Transportation over water, the slowest current form in the movement of goods/people.

Problems with Transportation Geography

Traffic and transportation in existing streets and highways and rail facilities no longer match the new demands created by recent population growth and new location patterns of economic activity. Besides increase in population, another problem is private automobiles overloading the network of highways and arterial streets.

Chapter-5

Political and Population Geography

Political Geography

Political geography is the field of human geography that is concerned with the study of both the spatially uneven outcomes of political processes and the ways in which political processes are themselves affected by spatial structures. Conventionally political geography adopts a three-scale structure for the purposes of analysis with the study of the state at the centre, above this is the study of international relations (or geopolitics), and below it is the study of localities. The primary concerns of the sub-discipline can be summarised as the inter-relationships between people, state, and territory.

History

The origins of political geography lie in the origins of human geography itself and the early practitioners were concerned mainly with the military and political consequences of the relationships between physical geography, state territories, and state power. In particular there was a close association with regional geography, with its focus on the unique characteristics of regions, and environmental determinism with its emphasis on the influence of the physical environment on human activities. This association found expression in the work of the German geographer Friedrich Ratzel who, in 1897 in his book *Politische Geographie*, developed the concept of Lebensraum (living space) which explicitly linked the cultural growth of a nation with territorial expansion, and which was later used to provide academic legitimation for the imperialist expansion of the German Third Reich in the 1930s.

The British geographer Halford Mackinder was also heavily influenced by environmental determinism and in developing his concept of the 'geopolitical pivot of history' or heartland (first developed in 1904) he argued that the era of sea power was coming to an end and that land based powers were in the ascendant, and, in particular, that whoever controlled the heartland of 'Euro-Asia' would control the world. This theory involved concepts diametrically opposed to the ideas of Alfred Thayer Mahan about the

significance of *sea power* in world conflict. The heartland theory hypothesized the possibility of a huge empire being created which didn't need to use coastal or transoceanic transport to supply its military industrial complex, and that this empire could not be defeated by the rest of the world coalitioned against it. This perspective proved influential throughout the period of the Cold War, underpinning military thinking about the creation of buffer states between East and West in central Europe.

The heartland theory depicted a world divided into a *Heartland* (Eastern Europe/Western Russia); *World Island* (Eurasia and Africa); *Peripheral Islands* (British Isles, Japan, Indonesia and Australia) and *New World* (The Americas). Mackinder claimed that whoever controlled the Heartland would have control of the world. He used this warning to politically influence events such as the Treaty of Versailles, where buffer states were created between the USSR and Germany, to prevent either of the them controlling the Heartland. At the same time, Ratzel was creating a theory of states based around the concepts of Lebensraum and Social Darwinism. He argued that states were analogous to 'organisms' that needed sufficient room in which to live. Both of these writers created the idea of a political and geographical science, with an objective view of the world. Pre-World War II political geography was concerned largely with these issues of global power struggles and influencing state policy, and the above theories were taken on board by German geopoliticians such as Karl Haushofer who - perhaps inadvertently - greatly influenced Nazi political theory. A form of politics legitimated by 'scientific' theories such as a 'neutral' requirement for state expansion was very influential at this time.

The close association with environmental determinism and the freezing of political boundaries during the Cold War led to a considerable decline in the importance of political geography which was described by Brian Berry in 1968 as 'a moribund backwater'. Although in other areas of human geography a number of new approaches were invigorating research, including quantitative spatial science, behavioural studies, and structural Marxism, these were largely ignored by political geographers whose main point of reference continued to be the regional approach. As a result much political geography of this period was descriptive with little attempt to produce generalisations from the data collected. It was not until 1976 that Richard Muir could argue that political geography might not be a dead duck but could in fact be a phoenix.

Areas of Study

The Brandenburg Gate of the Berlin Wall in 1961

From the late-1970s onwards political geography has undergone a renaissance, and could fairly be described as one of the most dynamic of the sub-disciplines today. The revival was underpinned by the launch of the journal Political Geography Quarterly (and its expansion to bi-monthly production as Political Geography). In part this growth has been associated with the adoption by political geographers of the approaches taken up earlier in other areas of human geography, for example, Ron J. Johnston's (1979) work on electoral geography relied heavily on the adoption of quantitative spatial science, Robert Sack's (1986) work on territoriality was based on the behavioural approach, and Peter Taylor's (e.g. 2007) work on World Systems Theory owes much to developments within structural Marxism. However the recent growth in the vitality and importance of the sub-discipline is also related to changes in the world as a result of the end of the Cold War, including the emergence of a new world order (which as yet is only poorly defined), and the development of new research agendas, such as the more recent focus on social movements and political struggles going beyond the study of nationalism with its explicit territorial basis. Recently, too, there has been increasing interest in the geography of green politics (see, for example, David Pepper's (1996) work), including the geopolitics of environmental protest, and in the capacity of our existing state apparatus and wider political institutions to address contemporary and future environmental problems competently.

Political geography has extended the scope of traditional political science approaches by acknowledging that the exercise of power is not restricted to states and bureaucracies, but

is part of everyday life. This has resulted in the concerns of political geography increasingly overlapping with those of other human geography sub-disciplines such as economic geography, and, particularly, with those of social and cultural geography in relation to the study of the politics of place (see, for example, the books by David Harvey (1996) and Joe Painter (1995)). Although contemporary political geography maintains many of its traditional concerns (see below) the multi-disciplinary expansion into related areas is part of a general process within human geography which involves the blurring of boundaries between formerly discrete areas of study, and through which the discipline as a whole is enriched.

In particular, then, modern political geography often considers:

- How and why states are organized into regional groupings, both formally (e.g. the European Union) and informally (e.g. the Third World)
- The relationship between states and former colonies, and how these are propagated over time, for example through neo-colonialism
- The relationship between a government and its people
- The relationships between states including international trades and treaties
- The functions, demarcations and policings of boundaries
- How imagined geographies have political implications
- The influence of political power on geographical space
- The study of election results (electoral geography)

Critical Political Geography

Critical political geography is mainly concerned with the criticism of traditional political geographies. As with much of the move towards 'Critical geographies', the arguments have drawn largely from postmodern, poststructural and postcolonial theories. Examples include:

- Feminist geography, which argues for a recognition of the power relations as patriarchal and attempts to theorise alternative conceptions of identity and identity politics. Alongside related concerns such as Queer theory and Youth studies
- Postcolonial theories which recognise the Imperialistic, universalising nature of much political geography, especially in Development geography

Electoral Geography

Electoral Geography is defined as the geographical differences regarding a region's political trend.

Electoral geography in the United Kingdom

Today in the United Kingdom, electoral geography is studied extensively and is normally compared to the US method of elections and regionalization. By employing UK methods of class cleavage, where the Conservative Party tends to be favoured by the white-collar class and the Labour Party by the UK's working class. Comparing the UK and the US methods of sectionalism places emphasis on location; instead of basing support for a party by class, the US does so by location. In the US, some areas are more heavily populated than others, giving us differences in population relating to the geography of each individual voting district. With class variations in education, living status and culture, this is the US way of sampling each area evenly.

In the UK, to extinguish regional identity, England was divided into nine regions. It was thought that people who congregate together seem to vote alike, rather than voting on one's own opinions. This theory has yet to be proven in any formal experiment. Even with nine areas, the voting patterns are seemingly divided between the two parties. Researchers are forced to question what causes this regional difference in voting outcomes.

England's voting method differs from that of the US. To produce an outcome England, "all voting takes place in the context of a particular electoral system. There has to be some agreed way of aggregating votes to produce a result. Votes indicate individuals' preferences and in the public elections these have to be translated into seats by some formula". By constructing this formula they reach an outcome giving them numbers for seats in Parliament.

England is not alone in selecting its electoral system. "… A cross-national study found seventy different systems in twenty-seven democracies." When choosing which system a government will use, great consideration has to be made. A serious question arises during this process; What should this election be designed to achieve? Some general answers that answer that important question are:

- To enable the representation of voters' opinion in rough proportion to their strength in the electorate
- To allow for the representation of geographically defined areas
- To decisively confer power on a team of leaders or a party."

An election has to have a clear reason behind it, and voters have to be aware of these reasons as well.

Despite the different methods that the UK uses for elections, electoral geography still has a play in each outcome.

Gerrymandering

Gerrymandering is the alteration of electoral boundaries to benefit one political party or ethnic group. An district can be distorted after gerrymandering. Four gerrymandering tools are:

- Splitting or dilution of the concentrations of the other side, so as to leave them a minority in as many districts as possible
- Packing or concentrating the other side in as few districts as possible, so that many of their votes are 'wasted', while also creating many districts with moderate margins of your side
- Placing incumbents of the other side in the same revised districts
- Creating "winner takes all" multi-member districts with your party in the majority.

History of gerrymandering

After a salamander-shaped electoral district was authorized by Massachusetts Governor Elbridge Gerry in the 1800s, gerrymandering was the term used for the manipulation of electoral regions.

Earlier, during the duration of gerrymandering, once blacks were permitted to vote an effort to restrict their effect was instated. "Even after districts became more equal in population and as blacks began to register and vote, legislatures tried to minimize black representation." As these events escalated the Voting Rights Act of 1966 diminished the possibilities of discrimination. This technique has been criticized through out time, since its beginning.

It is nearly impossible to alleviate any trace of discrimination in a geographic region simply due to population differences. On the other hand, one party should not be disproportionately favored or hurt. The recent instance with the 2000 Presidential election and the instated law of no one with a prior felony could vote, is a law violation in itself.

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Military geography

A landing in Egypt

Military geography is a sub-field of geography that is used by, not only the military, but also academics and politicians to understand the geopolitical sphere through the militaristic lens. Following the Second World War, Military Geography has become the "application of geographic tools, information, and techniques to solve military problems in peacetime or war." To accomplish these ends, military geographers must consider diverse geographical topics from geopolitics to the physical locations' influences on military operations and from the cultural to the economic impacts of a military presence. Military Geography is the most thought-of tool for geopolitical control imposed upon territory.

Without the framework that the military geographer provides, a commander's decision-making process is cluttered with multiple inputs from environmental analysts, cultural analysts, and many others. Without the military geographer to put all of the components together, a unit might know of the terrain, but not the drainage system below the surface. In that scenario, the unit would be at a disadvantage if the enemy would have chosen that drainage system as a point to ambush the unit as it passed through the area. The

complexities of the battlefield are multiplied tenfold when military operations are to take place within the boundaries of areas of urban development.

> “If a general desired to be a successful actor in the great drama of war, his first duty is to study carefully the theater of operations so that he may see clearly the relative advantages and disadvantages it presents for himself and his enemies.”
>
> — Baron De Jomini

Urbanistics

Due to the highly complex problems that urban development have given the military geographer, a term has been coined by Russian Colonel N.S. Olesik that can be applied to any military’s geography unit responsible for analyzing the urban environment: “military geo-urbanistics.” Fighting in the open country is much simpler; all that there is to deal with is the terrain, weather, and the enemy. However, urban combat involves much more than the weather, enemy, and terrain. The terrain is even more complex within urban areas, filled with many structures and transformations of the land by the inhabitants. Also, within urban areas the geographer must work with or work around the people. No matter the situation, there are always people that will cooperate. Likewise there are always those that will oppose, and there are also those that are caught between the two factions.

The difficulties for any military conducting operations within urban areas begin with the man-made structures that are what make an area urban. The different buildings themselves bring forth their own difficulties; obviously, this is due to the different types of structures that make up an urban area. The most dangerous aspect of urban warfare for U.S. troops, the roadside bomb, has become a deadly reality because of the narrow streets that convoys must use to get from one point to another within the confines of urban areas. Ambushes are more likely to be set up in or around heavily populated areas rather than the larger “industrial” locales that urban areas are set up around. In today’s wars this is common practice for guerrilla warriors often due to a western nation's unwillingness to bomb a neighborhood or hospital. In an urban area, especially cities, the dominance of air power is limited by the buildings’ ability to restrict visibility from the air and because of the possible collateral damage.

During an urban operation it is almost impossible for there not to be any collateral damage; the people are just too close to the action. Also, with the theater of urban combat, there are some people that will oppose the invading force, and sometimes that opposition will be armed opposition. The armed opposition, of course, makes it very difficult to identify enemy combatants from civilians. This is the case in the ongoing Iraq war. In many cases occupying troops fight residents of the cities they are occupying. Insurgents often conceal themselves in the rest of the population and may employ vehicle bombs and suicide bombing.

Base construction and closings

The United States Department of Defense maintains a larger number of domestic and foreign military bases than all other countries combined. Closing redundant military bases in the United States often has a negative economic impact on local communities. Analysts at the Pentagon respond to budget limitations by identifying installations that have become obsolete for various reasons. Sometimes the needs for the location are no longer prevalent in defense strategies or the installation's facilities have fallen into disrepair. That is the case with the smaller Reserve and National Guard facilities that dot every state. The personnel on the committees responsible for determining closures also observe the economic impact that their decisions will have on the communities surrounding the installations. If 40,000 people are employed because of the installation, either directly or indirectly, it is more likely that that facility will remain open, but only if there is nowhere for the 40,000 people that would lose their jobs. Those people could end up on welfare, thus becoming just as much of a draw on revenue as they were as employees.

Outside of the United States, some countries are strongly vying for inclusion in strategic treaties such as NATO. These countries, many of which are in Eastern Europe, want to join NATO for the mutual advantages of defense and the possibility for foreign bases to be constructed on their soil. These bases, if they were to be built, would bring fiscal resources that those nations would not get without the bases. Sometimes foreign bases are viewed as a good thing. In other regions, a strong political stance may be taken against the construction of foreign military bases, often for sovereignty issues.

Types of terrain

The following categories are different generic forms of combat that are the most prevalent in today's ongoing wars and are also anticipated to be the fields of battle in future conflicts. Each category has a unique climate that provides combatants with different obstacles. It is no longer as simple as "the high ground controls the low ground."

Desert warfare

The climate in this category is obviously an arid one. In many desert areas across the globe, the sand is a main concern. The sand can hamper an army's attempts to remain hydrated because it can sap the moisture from your skin. The sand is also very notorious for jamming the firing mechanisms for most firearms.

The terrain is usually fairly flat, though in some regions there are vast, rolling sand dunes. The desert environment can also contain mountains; such is the case in Afghanistan and in certain areas around Israel. Due to the ongoing conflicts in the Middle East, the U.S. military has redesigned the uniforms for the different branches of service. All of the uniforms have a digital camouflage pattern that is very effective in the desert

environment, and the boots have been changed from the standard polished black boots to a light brown colored suede leather boots. These boots are a lot cooler under the intense heat of the desert sun.

Jungle and forest warfare

The conditions of these regions are basically the opposite of those found in desert regions. There are thousands of flora and fauna, and there is always moisture present which presents its own difficulties. The moisture speeds up the rotting processes as well as causing wounds to become infected much easier because of all of the bacteria that live in the water. With proper filtration systems an army should have no problem keeping hydrated.

The densely packed trees and underbrush provide concealment from the air as well as from the ground. Ambushes can be easily conducted in this environment just like they can in an urban environment. The jungle can also contain mountains, but these mountains are organized differently from those that exist in the desert. The jungle mountains have far more plant life, and are usually much more difficult to ascend. Helicopters have been proven as a very useful means of transportation through, actually over, jungle and forested areas; Vietnam was, of course, the testing ground for this. Tanks and other vehicles have a hard time maneuvering through and around the densely packed trees, and most military aircraft fly too fast to accurately observe the ground through the trees.

Winter warfare

This type of warfare is not based on a geographical design, but is based on the drastic differences in this particular climate. During war it is much harder to remain warm than it is to remain cool. Even Forested areas can, and many do, experience winter weather conditions. For this specific type of combat there are soldiers that are specifically trained to fight under the conditions individual to the winter season. It takes a special skill to fight in the deep snow and extreme cold. These conditions call for a drastically thicker and thus warmer uniform, and the weapons even need to be refitted with the proper devices to ensure that they will operate in the cold.

Mountain warfare

No two mountains are alike, and so the training for this form of combat is very intense and is always changing. The warriors that participate in this form of warfare are a special breed. These men do everything that all the other soldiers do, but they do it with less oxygen in their lungs. Fighting up a mountain can be very treacherous. There can be avalanches, rockslides, cliffs, and ambushes from higher up the slopes, and there are almost guaranteed to be caves somewhere in the mountain, such as the case in Afghanistan.

Mud

Mud is a universal menace to all armies. While it does not hamper the use of air power, it does slow, and sometimes stops, ground movements all together. The most common season for mud across the globe is spring. Following the thawing of winter's snow and the addition of the rains that the season brings, the ground becomes very soft and almost any military vehicle would get bogged down if not properly equipped. The mud is not always dependent on the spring. Rather, in some parts of the world, they are determined by the monsoons.

Ocean fronts (harbors, beaches and sea cliffs)

Pirates

Even today, there is still a problem of piracy on the world's oceans. One of the most commonly thought of areas for this criminal activity is off the coast of Somalia. There has always been the constant threat of small and fast attack craft coming out to great a vessel as it passes through the waters between Africa and the Middle East. Another region that piracy occurs, and it can be of a much larger scale, is in and around the Indonesian islands and off the coasts of the Asian mainland. Here the pirates have been able to capture much larger prizes, and they pose a much larger threat to the security of economic interests of many countries. Pirates operate from bases that are concealed, but they must be on the waterfront in a country that is either ignorant of their activity, or worse, are paid to overlook it.

To deal with the pirates, if an American vessel is attacked, the U.S. Navy has multiple assets to deal with the situation. If the pirates know an attack is imminent, it may be more logical to bomb their base with aircraft from one of the carriers. However, more often than not, the U.S. Navy would opt for secrecy and send in a smaller force, such as the U.S. Navy SEALS, to eliminate the threat.

Harbors

In the concerns of a seaport, especially if it is a goal to either capture or defend it, there are more difficulties than in defending a city that is inland. With a harbor there is also the threat from the sea in addition to the land and the air. A harbor is always a key objective for an army to capture when an invasion is commenced. The sooner the harbor can be captured, the sooner it can be used to bring in massive amounts of reinforcements and material. The trouble is to capture the harbor before the enemy can sabotage it by blocking the entrance with wreckage or by deploying mines throughout the harbor. Defending the harbor is a treacherous task because odds are that the enemy can observe your position from both the air and the sea. The harbor is on the periphery of the defense network of many nations, and even more so if the navy is either deployed or nonexistent. The best ways to defend the harbor are to have military airfields in close vicinity, to have naval units based in the harbor on a permanent basis, and to be ready to make the harbor unusable by the enemy if they should overcome your defenses.

Beaches

Because more and more conflicts are occurring closer to the oceans, the possibility of a beach landing has gone up. In today's age defending a beach, or much of anything, no longer depends on the amount of fire power an army can bring down on the beach. The key to defending anything is with a powerful air force and an effective navy. If an army chose to land on a beach somewhere in the world and the opposing army was amassed around the shores to defend them, then the air forces of that army would bomb them into nothing. If a country were to use physical defense on the beach, then the best choices would be with mines in both land and sea. This would make an attack very costly and would possibly deter it, but there are not many ways to stop such an attack if that country's air and sea power were limited.

Sea cliffs

The same rules apply to this category as to the preceding one with the exception of the mines. Here there is almost no need for anti-vehicle mines, and so, the defenses could be planned without much concern for an armored attack.

Resources; future flashpoints

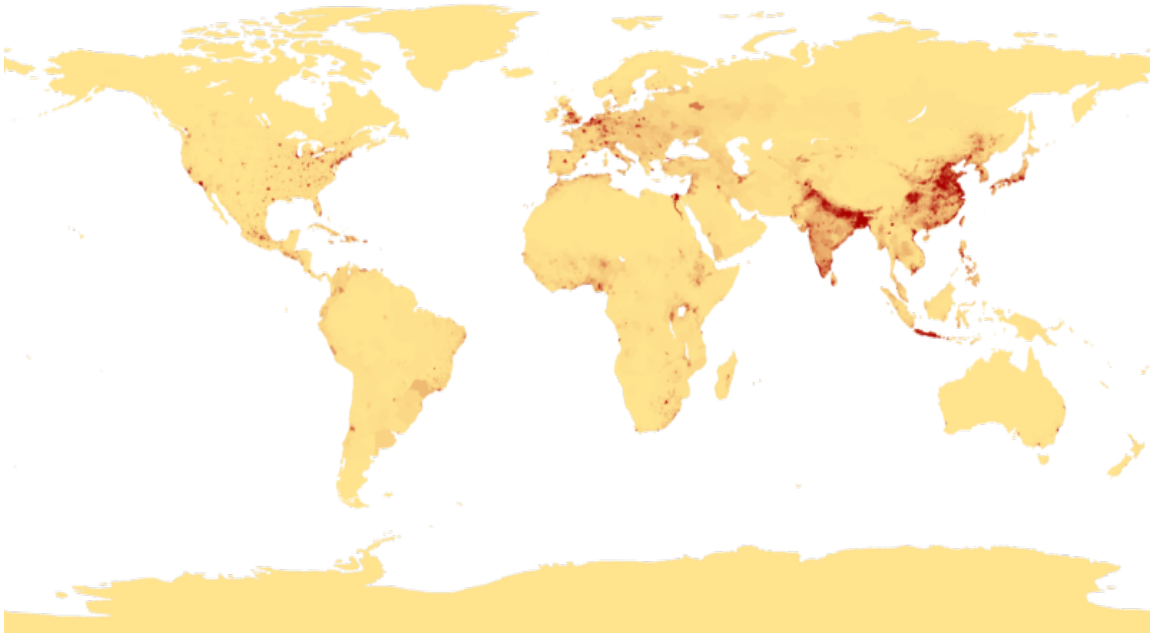
The Middle East is, of course, the most obvious place that comes to mind when we think of valuable resources that major nations may compete over when supplies begin to fall around the world. The first Gulf War was an example of the United States' willingness to go to war to protect its access to the rich oilfields of the Persian Gulf. The strong military presence there influenced some leaders to aid the United States with cheap oil, but over time those forces began to be viewed as a threat to the Muslim world. The attacks of September 11, 2001, have brought new hostilities to the region with the invasions of both Afghanistan and Iraq. Other hotspots around the globe centering on oil are the areas around Venezuela, the Caspian Sea region, and possibly the offshore oil deposits around Vietnam and China. In today's age, especially for people living in developed countries, it is hard to believe that there are other resources that can potentially cause a war.

The most precious and most needed resource of all is water, and in some parts of the world, that is a very expensive resource to obtain. The most obvious areas that conflict may arise over disputes for water supplies would be in the desert, but at the moment oil is the most valuable liquid in the Middle East. However, oil will not always be there, and if those people are going to survive, they must have water. Several times, countries that are upriver have threatened to build dams across the rivers in order to cut off the country down river, starving that particular country of its water supply. This has been the case with both the Nile and the River Jordan, and the results in both cases have been the same: the countries that are down river have threatened retaliation if such an event should occur. As our global warming trend continues, our weather patterns will continue to shift, and that means that some places will fall into a severe drought. These people may become desperate when they do not have the resources to obtain water if such a disaster should occur.

Water is not the only resource on this planet that is found to be a necessity. The forests are as well. These densely wooded regions of the world are constantly shrinking, and as the oil runs out, people will need to keep warm in the winter. Odds are that they will return to using wood as a primary fuel source for keeping warm. As the forests shrink, neighboring countries will turn on each other for this resource in order to appease their populations. The forests of Latin America and the Pacific Islands are the key hotspots for this resource; this is in part due to the already tense situations in and around those regions because of growing tensions over global oil supplies.

In 2002's Die Another Day, the term "conflict diamonds" is at the heart of the film's plot. In the film, the diamonds are the currency that is used to fund illegal weapons deals, and are used to fund the construction of the Icarus space weapon. The portrayal of the use of the diamonds that come out of Africa holds true in many cases. The term "conflict diamonds" is applied to those diamonds that are not sold through an internationally recognized company. They are "conflict diamonds" because warlords in Africa fight for these diamonds in order to sell them to acquire larger wealth and new weapons for continued fighting. The same is true for the gold fields in southern Africa. There are many warlords that would love to have control of the vast wealth of the mines in order to further fund their lucrative endeavors.

Population Geography



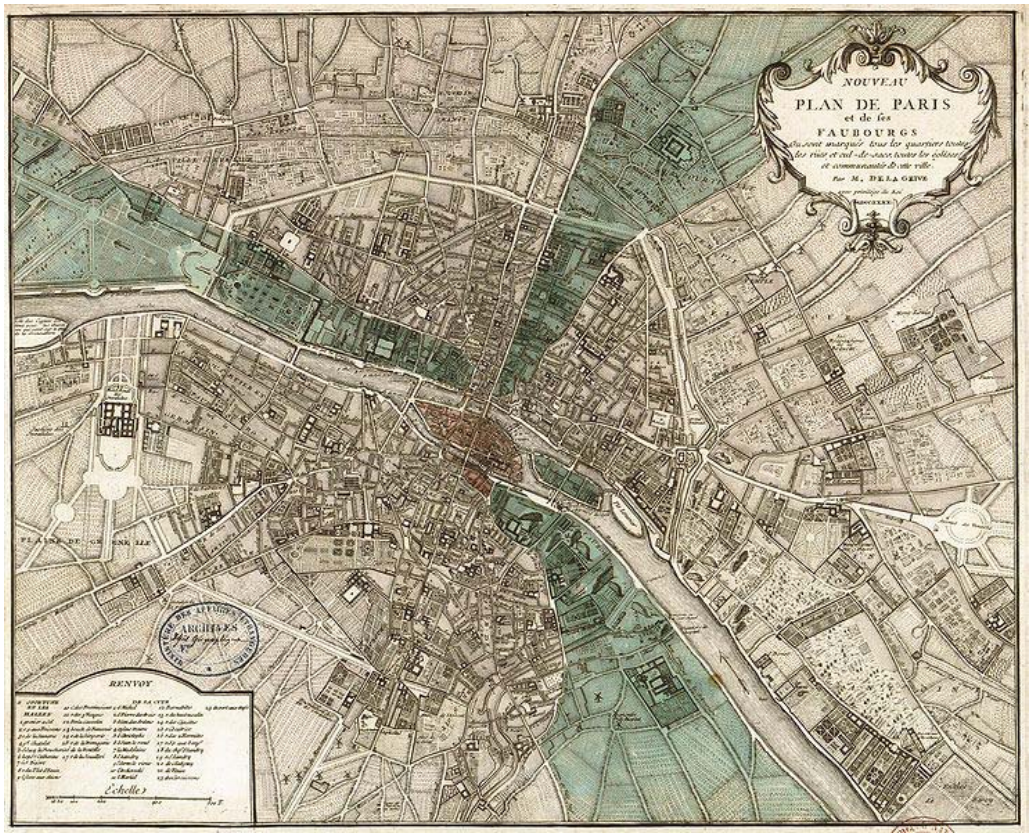
Map of world population density as of 1994.

Population geography is a division of human geography. It is the study of the ways in which spatial variations in the distribution, composition, migration, and growth of populations are related to the nature of places. Population geography involves demography in a geographical perspective. It focuses on the characteristics of population distributions that change in a spatial context. Examples can be shown through population density maps. A few types of maps that show the spatial layout of population are choropleth, isoline, and dot maps. Population geography studies:

- Demographic phenomena (natality, mortality, growth rates, etc) through both space and time
- Increase or decrease in population numbers
- The movements and mobility of populations
- Occupational Structure
- Grouping of people in settlements
- The way from the geographical character of places e.g. settlement patterns
- The way in which places in turn react to population phenomena e.g. immigration

All of the above are looked at over space and time.

Historical geography



A 1740 map of Paris

Historical geography is the study of the human, physical, fictional, theoretical, and "real" geographies of the past. Historical geography studies a wide variety of issues and topics. A common theme is the study of the geographies of the past and how a place or region changes through time. Many historical geographers study geographical patterns through time, including how people have interacted with their environment, and created the cultural landscape.

Historical geography seeks to determine how cultural features of various societies across the planet emerged and evolved, by understanding their interaction with their local environment and surroundings.

For some in the United States, the term *historical geography* has a more specialized meaning: the name given by Carl Ortwin Sauer of the University of California, Berkeley to his program of reorganizing cultural geography (some say all geography) along regional lines, beginning in the first decades of the 20th century. To Sauer, a landscape and the cultures in it could only be understood if all of its influences through history were taken into account: physical, cultural, economic, political, environmental. Sauer stressed regional specialization as the only means of gaining sufficient expertise on regions of the world. Sauer's philosophy was the principal shaper of American geographic thought in the mid-20th century. Regional specialists remain in academic geography departments to this day. But some geographers feel that it harmed the discipline; that too much effort was spent on data collection and classification, and too little on analysis and explanation. Studies became more and more area-specific as later geographers struggled to find places to make names for themselves. These factors may have led in turn to the 1950s crisis in geography, which raised serious questions about geography as an academic discipline in the United States.

This sub-branch of human geography is closely related to history and environmental history. At many colleges it is a field of study in Historical studies.

Chapter-6

Philosophical & Theoretical Approaches

Within each of the subfields, various philosophical approaches can be used in research; therefore, an urban geographer could be a Feminist or Marxist geographer, etc.

Such approaches are:

- Behavioral geography
- Critical geography
- Feminist geography
- Marxist geography
- Non-representational theory
- Postcolonialism
- Poststructuralist geography
- Psychoanalytic geography

1. Behavioral geography

Behavioral geography is an approach to human geography that examines human behavior using a disaggregate approach. Behavioral geographers focus on the cognitive processes underlying spatial reasoning, decision making, and behavior. In addition, behavioral geography is an ideology/approach in human geography that makes use of the methods and assumptions of behaviorism to determine the cognitive processes involved in an individual's perception of, and/or response and reaction to its environment.

Behavioral geography is that branch of human science, which deals with the study of cognitive processes with its response to its environment, through behaviorism.

Issues in behavioral geography

Because of the name it is often assumed to have its roots in behaviorism. While some behavioral geographers clearly have roots in behaviorism due to the emphasis on

cognition, most can be seen as cognitively oriented. Indeed, it seems that behaviorism interest is more recent and growing This is particularly true in the area of human landscaping.

Behavioral geography is an approach to human geography that examines human behavior using a disaggregate approach. It draws from early, behaviorist works such as Tolman's concepts of "cognitive maps". More cognitively oriented, behavioral geographers focus on the cognitive processes underlying spatial reasoning, decision making, and behavior. More behaviorally oriented geographers are materialists and look at the role of basic learning processes and how they influence the landscape patterns or even group identity.

The cognitive processes include environmental perception and cognition, wayfinding, the construction of cognitive maps, place attachment, the development of attitudes about space and place, decisions and behavior based on imperfect knowledge of one's environs, and numerous other topics.

The approach adopted in behavioral geography is closely related to that of psychology, but draws on research findings from a multitude of other disciplines including economics, sociology, anthropology, transportation planning, and many others.

2. Critical geography

Critical geography takes a critical theory (Frankfurt School) approach to the study and analysis of geography. The development of critical geography can be seen as one of the four major turning points in the history of geography (the other three being environmental determinism, regional geography and quantitative revolution). Though post-positivist approaches remain important in geography the critical geography arose as a critique of positivism introduced by quantitative revolution.

Two main schools of thought emerged from human geography and one existing school (**behavioural geography**) which made a brief comeback. Behavioural geography sought to counter the perceived tendency of quantitative geography to deal with humanity as a statistical phenomenon. It flourished briefly during the 1970s and sought to provide a greater understanding of how people perceived places and made locational decisions and sought to challenge mathematical models of society, in particular the use of econometric techniques. But the lack of a sound theoretical base left behavioural geography open to critique as merely descriptive and amounting to little more than a listing of spatial preferences.

Radical geography emerged during the 1970s and 1980s as the inadequacies of behavioralist methods became clear. It sought to counter the postivist quantitative methods with normative techniques drawn from Marxist theory: quantitative methods, it argued, were not useful unless alternatives or solutions were given to problems.

The final and, arguably, most successful of the three schools was **humanistic geography**, initially formed part of behavioural geography but fundamentally disagreed with the use of quantitative methods in assessing human behaviour and thoughts in favour of qualitative analysis. Humanistic geography used many of the techniques that the humanities use such as source analysis and the use of text and literature to try to 'get into the mind' of the subject(s). Furthermore, Cultural geography revived due to humanistic geography new areas of study such as Feminist geography, postmodernist and poststructuralist geography began to emerge.

3. Feminist geography

Feminist geography is an approach in human geography which applies the theories, methods and critiques of feminism to the study of the human environment, society and geographical space.

Areas of study

Rather than a specific sub-discipline of Geography, feminist geography is often considered part of a broader postmodern, critical theory approach, often drawing from the theories of Michel Foucault, Jacques Derrida, and Judith Butler among others. More recent influences include critiques of feminism from postcolonial theorists. Feminist geographers often focus on the lived experiences of individuals and groups in their own localities, upon the geographies that they live in within their own communities, rather than theoretical development without empirical work.

Many feminist geographers study the same subjects as other geographers, but often with a focus on gender divisions. This concern has developed into a concern with wider issues of gender, family, sexuality etc. Examples of areas of focus which stem from this include:

- Geographic differences in gender relations and gender equality
- The geography of women - spatial constraints, welfare geography
- The construction of gender identity through the use and nature of spaces and places
- Geographies of sexuality.
- Children's geographies

In addition to societal studies, Feminist Geography also critiques Human Geography and other academic disciplines, arguing that academic structures have been traditionally characterized by a patriarchal perspective, and that contemporary studies which do not confront the nature of previous work reinforce the masculine bias of academic study. The British Geographer Gillian Rose's *Feminism and Geography* is one such sustained criticism, focused on Human Geography in Britain as being historically masculinist in its

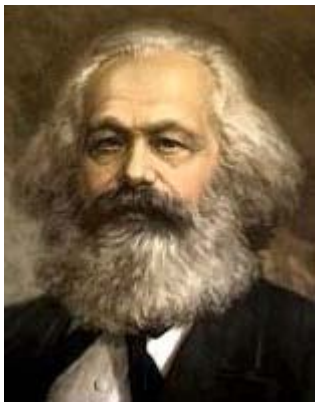
approach. This includes the writing of landscape as feminine (and thus as subordinate to male geographers), assuming a separation between mind and body. The following is referenced from Johnston & Sidaway (2004), and further describes such a separation and its influence on geography:

"'Cartesian dualism underlines our thinking in a myriad of ways, not least in the divergence of the social sciences from the natural sciences, and in a geography which is based on the separation of people from their environments. Thus while geography is unusual in its spanning of the natural and social sciences and in focusing on the interralations between people and their environments, it is still assumed that the two are distinct and one acts on the other. Geography, like all of the social sciences, has been built upon a particular conception of mind and body which sees them as separate, apart and acting on each other (Johnston, 1989, cited in Longhurst, 1997, p. 492)' Thus, too, feminist work has sought to transform approaches to the study of landscape by relating it to the way that it is represented ('appreciated' so to speak), in ways that are analogous to the heterosexual male gaze directed towards the female body (Nash 1996). Both of these concerns (and others)- about the body as a contested site and for the Cartesian distinction between mind and body - have been challenged in postmodern and poststructuralist feminist geographies."

List of related geographers

- Rosalyn Deutsche
- Sarah Holloway
- Cindi Katz
- Doreen Massey
- Linda McDowell
- Gillian Rose
- Evelyn Stokes
- Gill Valentine

4. Marxist geography



Marxist geography is a critical geography which utilises the theories and philosophy of Marxism to examine the spatial relations of human geography. In Marxist geography the relations that geography has traditionally analyzed - natural environment and spatial relations - are reviewed as outcomes of the mode of material production. To understand geographical relations, the social structure must also be examined. Marxist geography attempts to change the basic structure of society.

Philosophy and methodology

Marxist geography is radical in nature and its primary criticism of the positivist spatial science centered upon its methodologies, which failed to account or demonstrate the underlying mechanisms of capitalism and exploitation that underlie human spatial arrangements. As such, early Marxist geographers were explicitly political in advocating for social change and activism; they sought, through application of geographical analysis of social problems, to alleviate poverty and exploitation in capitalist societies. Marxist geography makes exegetical claims regarding how the deep-seated structures of capitalism act as a determinant and a constraints to human agency. Most of these ideas were developed in the early 1970s by dissatisfied quantitative geographers; David Harvey is generally regarded as the primary trail-blazer of the Marxist movement in human geography.

In order to accomplish such philosophical aims, these geographers rely heavily upon Marxist social and economic theory; drawing on Marxian economics and the concept of historical materialism to tease out the manner in which the means of production control human spatial distribution in capitalist structures. Marx is also invoked to examine how spatial relationships are affected by class. The emphasis is upon structure and structural mechanisms; emphasis on this aspect of society has yielded results but also criticism.

Criticism

Marxist geography's emphasis on constraints of structure upon human agency has been criticized extensively as deterministic; not allowing for the human agency and autonomy, whose action appears determined by capitalism's structural mechanisms in Marxist analysis. By contrast, Humanistic geography is a differing critical geography, which concentrates upon human will and autonomy in explaining geography's patterns. Unsurprisingly, much of the criticism directed at Marxists has emerged from the humanistic fold (though humanistic geography is itself seen as lacking for failing to account for behavioural constraints imposed by social structures).

Marxist geography is also subject to critiques of historical materialism and its applicability to modern day post-industrial and capitalist societies. The importance Marxists place on the notion of class is also subject to critique. Marxist geographers have responded in kind to these polemics.

5. Non-representational theory

Non-representational theory is a theory developed in human geography, largely through the work of Nigel Thrift (Warwick University), and his colleagues such as J.D. Dewsbury (University of Bristol). It challenges those using social theory and conducting geographical research to go beyond representation. Thus, Dewsbury describes practices of 'witnessing' that produce 'knowledge without contemplation'.

Instead of studying and representing social relationships, non-representational theory focuses upon practices - how human and nonhuman formations are enacted or performed - not simply on what is produced. This is a post-structuralist theory drawing in part from the works of Michel Foucault, Maurice Merleau-Ponty and phenomenonologists such as Martin Heidegger, but also weaving in the perspectives of Gilles Deleuze and Félix Guattari, Bruno Latour and Michel Serres, and more recently from political science (including ideas developed in radical democracy) and anthropological discussions of the material dimensions of human life. Non-representational theory's focus upon hybrid formations parallels the conception of 'hybrid geographies' developed by Sarah Whatmore.

Others have suggested that Thrift's use of the term 'non-representational theory' is problematic, and that other non-representational theories could be developed. Richard G Smith suggests that Baudrillard's work could be considered a 'non-representational theory', for example which has fostered some debate. In 2005, Hayden Lorimer (Glasgow University) suggested the term 'more-than-representational' as preferable.

6. Postcolonialism

Post-colonialism (**postcolonial theory**, **post-colonial theory**) is a specifically post-modern intellectual discourse that consists of reactions to, and analysis of, the cultural legacy of colonialism. Postcolonialism comprises a set of theories found amongst philosophy, film, political science, human geography, sociology, feminism, religious and theological studies, and literature.

Goals of Post-Colonialism

The ultimate goal of post-colonialism is combating the residual effects of colonialism on cultures. It is not simply concerned with salvaging past worlds, but learning how the world can move beyond this period together, towards a place of mutual respect. This section surveys the thoughts of a number of post-colonialism's most prominent thinkers as to how to go about this.

Post-colonialist thinkers recognize that many of the assumptions which underlay the "logic" of colonialism are still active forces today. Exposing and deconstructing the racist, imperialist nature of these assumptions will remove their power of persuasion and coercion. Recognizing that they are not simply airy substances but have widespread material consequences for the nature and scale of global inequality makes this project all the more urgent.

A key goal of post-colonial theorists is clearing space for multiple voices. This is especially true of those voices that have been previously silenced by dominant ideologies - subalterns. It is widely recognized within the discourse that this space must first be cleared within academia. Edward Said, in his book *Orientalism*, provides a clear picture of the ways social scientists, specifically Orientalists, can disregard the views of those they actually study - preferring instead to rely on the intellectual superiority of themselves and their peers.

To the extent that Western scholars were aware of contemporary Orientals or Oriental movements of thought and culture, these were perceived either as silent shadows to be animated by the Orientalist, brought into reality by them, or as a kind of cultural and international proletariat useful for the Orientalist's grander interpretive activity. (Said, 1978: 208)

Much debate has since taken place regarding how to effectively and fairly incorporate the subaltern voice into social studies. With such a huge mass of criticism against the idea of studying "others", many social scientists felt paralyzed, fatalistically accepting it as an impossibility. Spivak, an Indian post-colonialist thinker, rejects this outright. "To refuse to represent a cultural Other is salving your conscience, and allowing you not to do any homework."

Spivak recognizes the project is problematic, as recovery and presentation of a subaltern voice would likely essentialize its message, negating the subaltern masses' heterogeneity. Spivak suggests "strategic essentialism" - speaking on behalf of a group while using a clear image of identity to fight opposition - is the only solution to this problem. Applying this approach, bell hooks addresses the white academic reader on behalf of subalterns in the conclusion to her paper "Marginality as a site of resistance".

This is an intervention. A message from that space in the margin that is a site of creativity and power, that inclusive space where we recover ourselves, where we meet in solidarity to erase the category colonized/colonizer. Marginality is the space [site] of resistance. Enter that space. Let us meet there. Enter that space. We greet you as liberators. (hooks, 1990: 152)

Some post-colonial theorists make the argument that studying both dominant knowledge sets and marginalized ones as binary opposites perpetuates their existence as homogenous entities. Homi K. Bhabha feels the post-colonial world should valorize spaces of mixing; spaces where truth and authenticity move aside for ambiguity. This space of hybridity, he argues, offers the most profound challenge to colonialism. (Bhabha, 1994: 113) Critiques that Bhabha ignores Spivak's stated usefulness of essentialism have been put forward. Reference is made to essentialisms' potential usefulness. An organized voice provides a more powerful challenge to dominant knowledge - whether in academia or active protests.

Fanon offers a less bright and more violent prescription for moving beyond the colonial mindset. He argues that previously colonized peoples would remain hybrids with a miserably schizophrenic identity unless they revolt violently against their oppressors. This collective action would apparently stimulate collective pride, freeing them of their inferiority complexes.

Ultimately, however, Post-colonialism is a hopeful discourse. The very "post" defines the discipline as one that looks forward to a world that has truly moved beyond all that colonialism entails, together. Mbembe finds it gives him "hope in the advent of a universal brotherly [and I would add sisterly] community". Asking what it means to be human together, post-colonialism aims at decolonizing the future.

Subject matters

"The final hour of colonialism has struck, and millions of inhabitants of Africa, Asia and Latin America rise to meet a new life and demand their unrestricted right to self-determination."
— Che Guevara, speech to the United Nations, December 11, 1964

The critical nature of postcolonial theory entails destabilizing Western way of thinking, therefore creating space for the subaltern, or marginalized groups, to speak and produce alternatives to dominant discourse. Often, the term postcolonialism is taken literally, to mean the period of time after colonialism. This however is problematic because the

‘once-colonized world’ is full of “contradictions, of half-finished processes, of confusions, of hybridity, and liminalities”. In other words, it is important to accept the plural nature of the word postcolonialism, as it does not simply refer to the period after the colonial era. By some definitions, postcolonialism can also be seen as a continuation of colonialism, albeit through different or new relationships concerning power and the control/production of knowledge. Due to these similarities, it is debated whether to hyphenate postcolonialism as to symbolize that we have fully moved beyond colonialism.

Postcolonialism as a literary theory (with a critical approach), deals with literature produced in countries that once were colonies of other countries, especially of the European colonial powers Britain, France, and Spain; in some contexts, it includes countries still in colonial arrangements. It also deals with literature written by citizens of colonial countries that portrays colonized people as its subject matter. Colonized people, especially of the British Empire, attended British universities and with their access to education, created this new criticism. Following the breakup of the Soviet Union during the late 20th century, its former republics became the subject of this study as well.

Often, previously colonized places are homogenized in western discourse under an umbrella label such as the ‘Third World’. Postcolonialism demonstrates the heterogeneity of colonized places by analyzing the uneven impact of Western colonialism on different places, peoples, and cultures. This is done by engaging with the variety of ways in which “relations, practices and representations” of the past is “reproduced or transformed”, and studying the connections between the “heart and margins” of the empire. Moreover, postcolonialism recognizes that there was, and still is, resistance to the West. This resistance is practiced by many, including the subaltern, a group of marginalized, and least powerful.

Postcolonial theory provides a framework that destabilizes dominant discourses in the West, challenges “inherent assumptions”, and critiques the “material and discursive legacies of colonialism”. In order to challenge these assumptions and legacies of colonialism, postcolonial studies needs to be grounded, which entails working with tangible identities, connections, and processes. Postcolonial theorist Edward Said's 1978 book *Orientalism* has been described as a seminal work in the field.

Furthermore, Postcolonialism deals with cultural identity in colonized societies: the dilemmas of developing a national identity after colonial rule; the ways in which writers articulate and celebrate that identity (often reclaiming it from and maintaining strong connections with the colonizer); the ways in which the knowledge of the colonized (subordinated) people has been generated and used to serve the colonizer's interests; and the ways in which the colonizer's literature has justified colonialism via images of the colonised as a perpetually inferior people, society and culture. These inward struggles of identity, history, and future possibilities often occur in the metropolis and, ironically, with the aid of postcolonial structures of power, such as universities. Not surprisingly, many contemporary postcolonial writers reside in London, Paris, New York and Madrid.

The creation of binary opposition structures changed the way we view others. In the case of colonialism, the Oriental and the Westerner were distinguished as different from each other (i.e. the emotional, static, Orient vs. the principled, progressive Occident). This opposition justified the "white man's burden," the coloniser's self-perceived "destiny to rule" subordinate peoples. In contrast, post-colonialism seeks out areas of hybridity and transculturalization. This aspect is particularly relevant during processes of globalization.

In *Post-Colonial Drama: theory, practice, politics,* Helen Gilbert and Joanne Tompkins write: "the term postcolonialism – according to a too-rigid etymology – is frequently misunderstood as a temporal concept, meaning the time after colonialism has ceased, or the time following the politically determined Independence Day on which a country breaks away from its governance by another state, Not a naïve teleological sequence which supersedes colonialism, postcolonialism is, rather, an engagement with and contestation of colonialism's discourses, power structures, and social hierarchies ... A theory of postcolonialism must, then, respond to more than the merely chronological construction of post-independence, and to more than just the discursive experience of imperialism."

Colonized peoples reply to the colonial legacy by *writing back to the center*, when the indigenous peoples write their own histories and legacies using the coloniser's language (e.g. English, French, Dutch) for their own purposes. "Indigenous decolonization" is the intellectual impact of postcolonialist theory upon communities of indigenous peoples, thereby, their generating postcolonial literature.

A single, definitive definition of postcolonial theory is controversial; writers have strongly criticised it as a concept embedded in identity politics. Ann Laura Stoler, in *Carnal Knowledge and Imperial Power,* argues that the simplistic oppositional binary concept of *Coloniser and Colonised* is more complicated than it seems, since these categories are fluid and shifting; postcolonial works emphasise the re-analysis of categories assumed to be natural and immutable.

Postcolonial Theory - as epistemology, ethics, and politics - addresses matters of identity, gender, race, racism and ethnicity with the challenges of developing a post-colonial national identity, of how a colonised people's knowledge was used against them in service of the coloniser's interests, and of how knowledge about the world is generated under specific relations between the powerful and the powerless, circulated repetitively and finally legitimated in service to certain imperial interests. At the same time, postcolonial theory encourages thought about the colonised's creative resistance to the coloniser and how that resistance complicates and gives texture to European imperial colonial projects, which utilised a range of strategies, including anti-conquest narratives, to legitimise their dominance.

Postcolonial writers object to the colonised's depiction as hollow "mimics" of Europeans or as passive recipients of power. Consequent to Foucauldian argument, postcolonial scholars, i.e. the Subaltern Studies collective, argue that anti-colonial resistance accompanies every deployment of power.

Notable theorists

Edward Said

Said took the term Orientalism, which was used in the West neutrally to describe the study and artistic depiction of the Orient, and subverted it to mean a constructed binary division of the world into the Orient and the Occident. This binary, also referred to as the East/West binary, is key in postcolonial theory. Said argued that the Occident could not exist without the Orient, and vice versa. In other words, they are mutually constitutive. Notably, the concept of the ‘East’ i.e. the Orient, was created by the ‘West’, suppressing the ability of the ‘Orient’ to express themselves. Western depictions of the ‘Orient’ construct an inferior world, a place of backwardness, irrationality, and wildness. This allowed the ‘West’ to identify themselves as the opposite of these characteristics; as a superior world that was progressive, rational, and civil.

Furthermore, Said, following Foucalt's belief, states that power and knowledge are inseparable. The ‘West’s’ claim to knowledge of the East gave the ‘West’ the power to name, and the power to control. This concept is essential to understanding of colonialism, and therefore recognizing postcolonialism.

Some postcolonial writers have critiqued Said's homogeneous binary of Occident and Orient insisting that multiple variations of Orientalism have been created within the western world and are at work. Said believes that Europe used Orientalism as a homogeneous "other" to form a more cohesive European identity.

Gayatri Chakravorty Spivak

Spivak's main contribution to Postcolonial theory came with her specific definition of the term subaltern. Spivak also introduced terms such as 'essentialism', 'strategic essentialism'. The former term refers to the dangers of reviving subaltern voices in ways that might simplify heterogeneous groups, creating stereotyped impressions of their diverse group. Spivak however believes that essentialism can sometimes be used strategically by these groups to make it easier for the subaltern to be heard and understood when a clear identity can be created and accepted by the majority. It is important to distinguish that 'strategic essentialism' does not sacrifice its diversity and voices but that they are being downplayed temporarily to support the essential element of the group.

Spivak also created the term 'epistemic violence' which refers to the destruction of non-western ways of knowing and thereby the domination of western ways of understanding. This concept relates to Spivak's "Subaltern must always be caught in translation, never truly expressing herself" because of the destruction and marginalization of her way of understanding.

Furthermore, Spivak criticizes those who ignore the "cultural others" (the subaltern) and has offered constructive theories for allowing the West to go beyond its current position

through self-criticism of western methods and ideals of understanding and exploring the alternatives offered by post-colonialism.

Frantz Fanon

Fanon is one of the earliest writers associated with postcolonialism. In his book The Wretched of the Earth, Fanon analyzed the nature of colonialism and those subjugated by it. He describes colonialism as a source of violence rather than reacting violently against resistors which had been the common view. His portrayal of the systematic relationship between colonialism and its attempts to deny "all attributes of humanity" to those it suppressed laid the groundwork for related critiques of colonial and postcolonial systems.

International relations

The Middle East and national identity

In the last decade, Middle Eastern studies and research produced works focusing upon the colonial past's effects on the internal and external political, social, cultural, and economic circumstances of contemporary Middle Eastern countries; cf. Raphael Israeli's "Is Jordan Palestine?" A particular focus of study is the matter of Western discourses about the Middle East, and the existence or the lack of national identity formation:

"... [M]ost countries of the Middle East, suffered from the fundamental problems over their national identity. More than three-quarters of a century after the disintegration of the Ottoman Empire, from which most of them emerged, these states have been unable to define, project, and maintain a national identity that is both inclusive and representative".

Independence and the end of colonialism have not ended social fragmentation and war in the Middle East. Larbi Sadiki wrote in *The Search for Arab Democracy: Discourses and Counter-Discourses* (2004), because European colonial powers drew borders discounting peoples, ancient tribal boundaries and local history, the Middle East's contemporary national identity problem can be traced back to imperialism and colonialism.

Kumaraswamy writes that "in places like Iraq and Jordan, leaders of the new state were brought in from the outside, [and] tailored to suit colonial interests and commitments. Likewise, most states in the Persian Gulf were handed over to those who could protect and safeguard imperial interests in the post-withdrawal phase",

According to Sadiki, "with notable exceptions like Egypt, Iran, Iraq, and Syria, most [countries] ... had to [re-]invent, their historical roots" after colonialism. Therefore, "like its colonial predecessor, postcolonial identity owes its existence to force".

Africa

The interior of Africa was not colonised until almost the end of the 19th century, yet the impact of colonialism was even more significant to the indigenous cultures, especially because of the Scramble for Africa. The increasingly efficient railway helped European powers to gain control over all regions of Africa, with the British particularly emphasizing goals of conquest. The British Empire sought to build a single railway through the continent and succeeded in building tracks from Egypt to Cape Town.

Many African empires existed in the pre-colonial era, such as the Ashanti, Ghana Empire, Kongo Kingdom, and Edo Empire. Nigeria was home to the Haussa, Yoruba and Igbo cultures and Chinua Achebe was among the first to take up this history in the construction of a postcolonial identity, as in *Things Fall Apart*.

Kenyan Ngugi wa Thiong'o was educated at the British University of Leeds and wrote the first postcolonial East African novel, *Weep Not, Child*, in 1964. The later *The River Between* addresses postcolonial religious issues. His essay *Decolonising the Mind: The Politics of Language in African Literature* is considered one of the most important pieces of African literary criticism.

Criticism of focusing on national identity

Scholars criticise and question the recent post-colonial focus on national identity. The Moroccan scholar Bin 'Abd al-'Ali argues that what is seen in contemporary Middle Eastern studies is 'a pathological obsession with ... identity'. Nevertheless, Kumaraswamy and Sadiki argue that the problem of the lack of Middle Eastern identity formation is widespread, and that identity is an important aspect of understanding the politics of the contemporary Middle East. Whether the countries are Islamic regimes, republican regimes, quasi-liberal monarchies, democracies, or evolving democracies, ‘the Middle Eastern region suffers from the inability to recognize, integrate, and reflect its ethno-cultural diversity.’
Ayubi (2001) questions if what Bin 'Abd al-'Ali described as an obsession with national identity may be explained by 'the absence of a championing social class?'

Founding works on postcolonialism

- Aimé Césaire: *Discourse on Colonialism* (1950)
- Frantz Fanon: *Black Skin, White Masks* (1952)
- Frantz Fanon: *The Wretched of the Earth* (1961)
- Albert Memmi: *The Colonizer and the Colonized* (1965)
- Kwame Nkrumah: *Consciencism* (1970)
- Edward Said: *Orientalism* (1978)

Other important works

- Vladimir Lenin. "Imperialism, the Highest Stage of Capitalism", (1916)
- O. Mannoni and Pamela Powesland. "Prospero and Caliban, The Psychology of Colonization"
- Bill Ashcroft. "The Empire Writes Back", (1989)
- Bill Ashcroft, Gareth Griffths and Helen Tiffn. *Key Concepts in Post-Colonial Studies*, Routledge: 1998.
- Benedict Anderson. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, [1983] (1991) rev. ed., London: Verso. ISBN 0-86091-329-5..
- Guy Ankerl. *Coexisting Contemporary Civilizations*, Geneva INU PRESS; 2000 ISBN2-88155-004-5
- Ashis Nandy. *The Intimate Enemy: Loss and Recovery of Self Under Colonialism*. (1983)
- Ashis Nandy. *Traditions, Tyranny, and Utopias: Essays in the Politics of Awareness* (1987).
- Balagangadhara. *"The Heathen in his Blindness..." Asia, the West, and the Dynamic of Religion.* (1994, 2nd ed. 2005) ISBN 90-04-09943-3.
- Benita Parry: *Delusions and Discoveries* (1983)
- Gayatri Chakravorty Spivak, "Can the Subaltern Speak?" (1988)
- Gayatri Chakravorty Spivak: "The Postcolonial Critic" (1990)
- Gayatri Chakravorty Spivak: "Selected Subaltern Studies" (1988)
- Gayatri Chakravorty Spivak: "A Critique of Postcolonial Reason: Towards a History of the Vanishing Present" (1999)
- Hamid Dabashi, "Iran: A People Interrupted" (2007)

Chapter-7

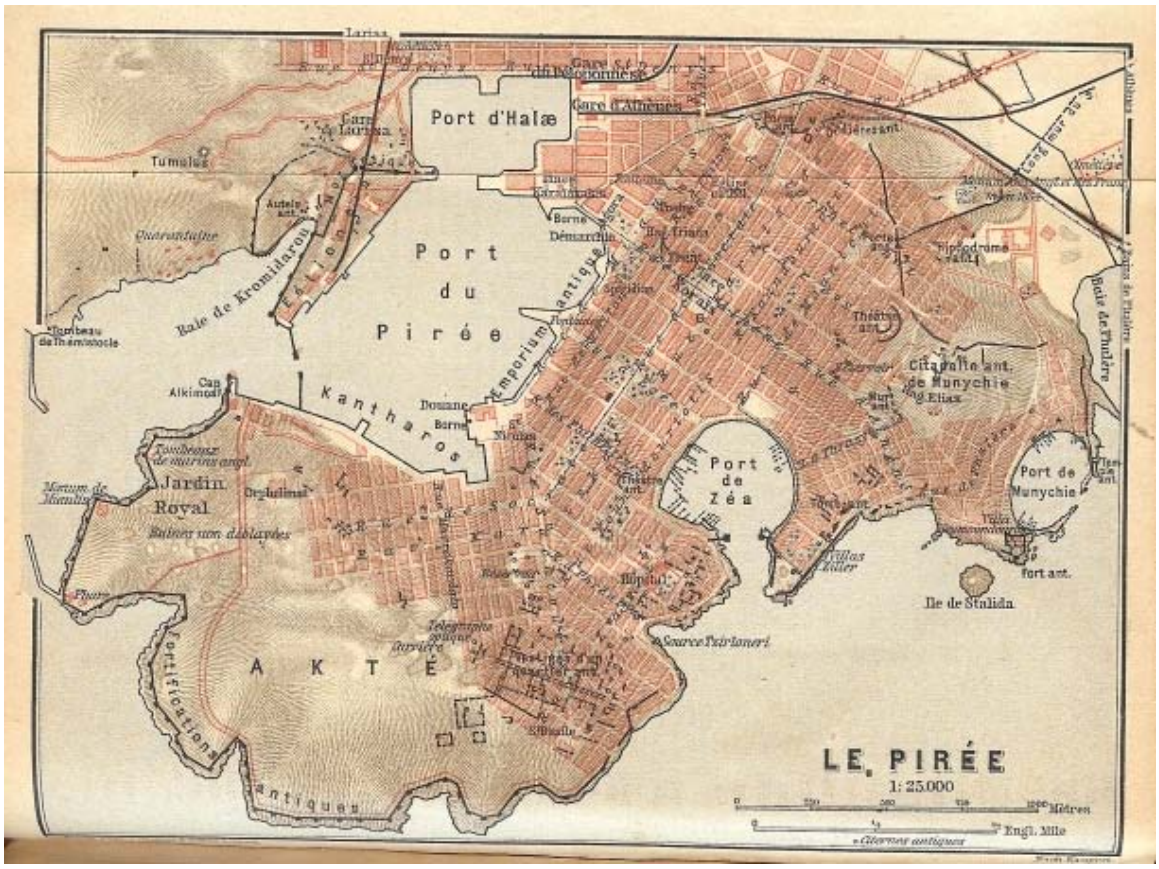
Urban Planning

Urban planning designs settlements, from the smallest towns to the largest cities. Shown here is Hong Kong from Western District overlooking Kowloon, which are separated by the Victoria Harbour.

Urban, city, and town planning integrates land use planning and transportation planning to improve the built, economic and social environments of communities. Regional planning deals with a still larger environment, at a less detailed level.

Urban planning can include urban renewal, by adapting urban planning methods to existing cities suffering from decay and lack of investment.

History



Map of Piraeus, the port of Athens, showing the grid plan of the city.

In the Neolithic period, agriculture and other techniques facilitated larger populations than the very small communities of the Paleolithic, which probably led to the stronger, more coercive governments emerging at that time. The pre-Classical and Classical periods saw a number of cities laid out according to fixed plans, though many tended to develop organically. Designed cities were characteristic of the Mesopotamian, Harrapan, and Egyptian civilizations of the third millennium BCE.

Distinct characteristics of urban planning from remains of the cities of Harappa, Lothal, and Mohenjo-daro in the Indus Valley Civilization (in modern-day northwestern India and Pakistan) lead archeologists to conclude that they are the earliest examples of deliberately planned and managed cities. The streets of many of these early cities were paved and laid out at right angles in a grid pattern, with a hierarchy of streets from major boulevards to residential alleys. Archaeological evidence suggests that many Harrapan houses were laid out to protect from noise and enhance residential privacy; many also had their own water wells, probably for both sanitary and ritual purposes. These ancient cities

were unique in that they often had drainage systems, seemingly tied to a well-developed ideal of urban sanitation.

The Greek Hippodamus (c. 407 BC) has been dubbed the "Father of City Planning" for his design of Miletus; Alexander commissioned him to lay out his new city of Alexandria, the grandest example of idealized urban planning of the ancient Mediterranean world, where the city's regularity was facilitated by its level site near a mouth of the Nile. The Hippodamian, or grid plan, was the basis for subsequent Greek and Roman cities.

The ancient Romans used a consolidated scheme for city planning, developed for military defense and civil convenience. The basic plan consisted of a central forum with city services, surrounded by a compact, rectilinear grid of streets, and wrapped in a wall for defense. To reduce travel times, two diagonal streets crossed the square grid, passing through the central square. A river usually flowed through the city, providing water, transport, and sewage disposal. Many European towns, such as Turin, preserve the remains of these schemes, which show the very logical way the Romans designed their cities. They would lay out the streets at right angles, in the form of a square grid. All roads were equal in width and length, except for two, which were slightly wider than the others. One of these ran east–west, the other, north–south, and intersected in the middle to form the center of the grid. All roads were made of carefully fitted flag stones and filled in with smaller, hard-packed rocks and pebbles. Bridges were constructed where needed. Each square marked by four roads was called an *insula*, the Roman equivalent of a modern city block.

Each insula was 80 yards (73 m) square, with the land within it divided. As the city developed, each insula would eventually be filled with buildings of various shapes and sizes and crisscrossed with back roads and alleys. Most insulae were given to the first settlers of a Roman city, but each person had to pay to construct his own house.

The city was surrounded by a wall to protect it from invaders and to mark the city limits. Areas outside city limits were left open as farmland. At the end of each main road was a large gateway with watchtowers. A portcullis covered the opening when the city was under siege, and additional watchtowers were constructed along the city walls. An aqueduct was built outside the city walls.

The collapse of Roman civilization saw the end of Roman urban planning, among other arts. Urban development in the Middle Ages, characteristically focused on a fortress, a fortified abbey, or a (sometimes abandoned) Roman nucleus, occurred "like the annular rings of a tree", whether in an extended village or the center of a larger city. Since the new center was often on high, defensible ground, the city plan took on an organic character, following the irregularities of elevation contours like the shapes that result from agricultural terracing.

The ideal centrally-planned urban space: *Sposalizio* by Raphael Sanzio, 1504

The ideal of wide streets and orderly cities was not lost, however. A few medieval cities were admired for their wide thoroughfares and orderly arrangements, but the juridical chaos of medieval cities (where the administration of streets was sometimes passed down through noble families), and the characteristic tenacity of medieval Europeans in legal matters prevented frequent or large-scale urban planning until the Renaissance and the early-modern strengthening of central government administration, as European (and soon after, North American) society transited from city-states to what we would recognize as a more modern concept of a nation-state.

Florence was an early model of the new urban planning, which took on a star-shaped layout adapted from the new star fort, designed to resist cannon fire. This model was

widely imitated, reflecting the enormous cultural power of Florence in this age; "[t]he Renaissance was hypnotized by one city type which for a century and a half— from Filarete to Scamozzi— was impressed upon utopian schemes: this is the star-shaped city". Radial streets extend outward from a defined center of military, communal or spiritual power.

Only in ideal cities did a centrally planned structure stand at the heart, as in Raphael's *Sposalizio* (*Illustration*) of 1504. As built, the unique example of a rationally planned *quattrocento* new city center, that of Vigevano (1493–95), resembles a closed space instead, surrounded by arcading.

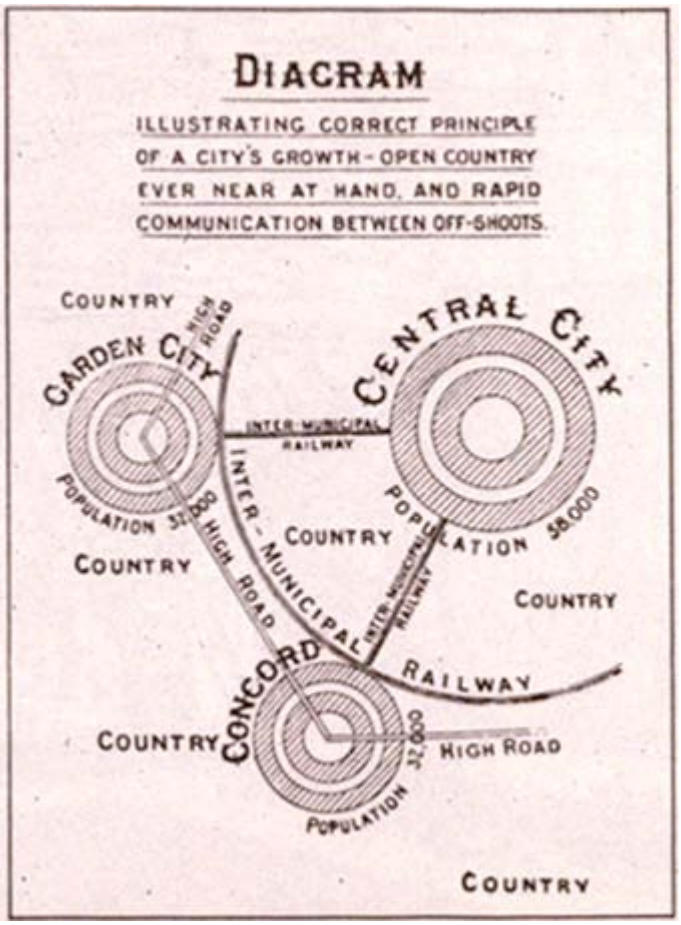
Filarete's ideal city, building on Leone Battista Alberti's *De re aedificatoria*, was named "Sforzinda" in compliment to his patron; its twelve-pointed shape, circumscribable by a "perfect" Pythagorean figure, the circle, took no heed of its undulating terrain in Filarete's manuscript. This process occurred in cities, but ordinarily not in the industrial suburbs characteristic of this era, which remained disorderly and characterized by crowding and organic growth.

Following the 1695 bombardment of Brussels by the French troops of King Louis XIV, in which a large part of the city center was destroyed, Governor Max Emanuel proposed using the reconstruction to completely change the layout and architectural style of the city. His plan was to transform the medieval city into a city of the new baroque style, modeled on Turin, with a logical street layout, with straight avenues offering long, uninterrupted views flanked by buildings of a uniform size. This plan was opposed by residents and municipal authorities, who wanted a rapid reconstruction, did not have the resources for grandiose proposals, and resented what they considered the imposition of a new, foreign, architectural style. In the actual reconstruction, the general layout of the city was conserved, but it was not identical to that before the cataclysm. Despite the necessity of rapid reconstruction and the lack of financial means, authorities did take several measures to improve traffic flow, sanitation, and the aesthetics of the city. Many streets were made as wide as possible to improve traffic flow.

In the 1990s, the University of Kentucky voted the Italian town of Todi as the ideal city and "most livable town in the world", the place where man and nature, history and tradition, come together to create a site of excellence. In Italy, other examples of ideal cities planned according to scientific methods are Urbino, Pienza, Ferrara, San Giovanni Valdarno, and San Lorenzo Nuovo.

Many Central American civilizations also planned their cities, including sewage systems and running water. In Mexico, Tenochtitlan was the capital of the Aztec empire, built on an island in Lake Texcoco in what is now the Federal District in central Mexico. At its height, Tenochtitlan was one of the largest cities in the world, with over 200,000 inhabitants.

Shibam in Yemen features over 500 tower houses, each rising 5 to 11 storeys high, with each floor being an apartment occupied by a single family. The city has some of the tallest mudbrick houses in the world, some over 100 feet (30 meters) high.



Ebenezer Howard's influential 1902 diagram, illustrating urban growth through garden city "off-shoots"

In the developed countries of Western Europe, North America, Japan, and Australasia, planning and architecture can be said to have gone through various paradigms or stages of consensus in the last 200 years. Firstly, there was the industrialised city of the 19th century, where building was largely controlled by businesses and wealthy elites. Around 1900, a movement began for providing citizens, especially factory workers, with healthier environments. The concept of the garden city arose and several model towns were built, such as Letchworth and Welwyn Garden City in Hertfordshire, UK, the world's first garden cities. These were small in size, typically providing for a few thousand residents.

In the 1920s, the ideas of modernism began to surface in urban planning. Based on the ideas of Le Corbusier and using new skyscraper-building techniques, the modernist city stood for the elimination of disorder, congestion, and the small scale, replacing them with preplanned and widely spaced freeways and tower blocks set within gardens. There were plans for large-scale rebuilding of cities in this era, such as the *Plan Voisin* (based on Le

Corbusier's Ville Contemporaine), which proposed clearing and rebuilding most of central Paris. No large-scale plans were implemented until after World War II, however. Throughout the late 1940s and 1950s, housing shortages caused by wartime destruction led many cities to subsidize housing blocks. Planners used the opportunity to implement the modernist ideal of towers surrounded by gardens. The most prominent example of an entire modernist city is Brasilia in Brazil, constructed between 1956 and 1960.

Reaction

By the late 1960s and early 1970s, many planners felt that modernism's clean lines and lack of human scale sapped vitality from the community, blaming them for high crime rates and social problems.

Modernist planning fell into decline in the 1970s when the construction of cheap, uniform tower blocks ended in most countries, such as Britain and France. Since then many have been demolished and replaced by other housing types. Rather than attempting to eliminate all disorder, planning now concentrates on individualism and diversity in society and the economy; this is the post-modernist era.

Minimally planned cities still exist. Houston is a large city (with a metropolitan population of 5.5 million) in a developed country without a comprehensive zoning ordinance. Houston does, however, restrict development densities and mandate parking, even though specific land uses are not regulated. Also, private-sector developers in Houston use subdivision covenants and deed restrictions to effect land-use restrictions resembling zoning laws. Houston voters have rejected comprehensive zoning ordinances three times since 1948. Even without traditional zoning, metropolitan Houston displays large-scale land-use patterns resembling zoned regions comparable in age and population, such as Dallas. This suggests that non-regulatory factors such as urban infrastructure and financing may be as important as zoning laws in shaping urban form.

Sustainable development and sustainability

Sustainable development and sustainability influence today's urban planners. Some planners argue that modern lifestyles use too many natural resources, polluting or destroying ecosystems, increasing social inequality, creating urban heat islands, and causing climate change. Many urban planners, therefore, advocate sustainable cities.

However, sustainable development is a recent, controversial concept. Wheeler, in his 1998 article, defines sustainable urban development as "development that improves the long-term social and ecological health of cities and towns." He sketches a 'sustainable' city's features: compact, efficient land use; less automobile use, yet better access; efficient resource use; less pollution and waste; the restoration of natural systems; good housing and living environments; a healthy social ecology; a sustainable economy; community participation and involvement; and preservation of local culture and wisdom.

Because of political and governance structures in most jurisdictions, sustainable planning measures must be widely supported before they can affect institutions and regions. Actual implementation is often a complex compromise.

Collaborative Strategic Goal Oriented Programming (CoSGOP) is a collaborative and communicative way of strategic programming, decision-making, implementation, and monitoring oriented towards defined and specific goals. It is based on sound analysis of available information, emphasizes stakeholder participation, works to create awareness among actors, and is oriented towards managing development processes. It was adopted as a theoretical framework for analyzing redevelopment processes in large urban distressed areas in European cities.

Background of CoSGOP'

CoSGOP is derived from goal-oriented planning (Gesellschaft für Technische Zusammenarbeit - GTZ 1988), which was oriented towards the elaboration and implementation of projects based on a logical framework, which was useful for embedding a specific project in a wider development frame and defining its major elements. This approach had weaknesses: its logical rules were strictly applied and the expert language did not encourage participation. CoSGOP introduced a new approach characterized by communication with and active involvement of stakeholders and those to be affected by the program; strategic planning based on the identification of strengths and weakness, opportunities and threats, as well as on scenario-building and visioning; the definition of goals as the basis for action; and long-term, flexible programming of interventions by stakeholders.

Elements of CoSGOP

CoSGOP is not a planning method but a process model. It provides a framework for communication and joint decision-making, in a structured process characterized by feedback loops. It also facilitates stakeholder learning. The essential elements of CoSGOP are analysis of stakeholders (identifying stakeholders' perceptions of problems, interests, and expectations); analysis of problems and potentials (including objective problems and problems and potentials perceived by stakeholders); development of goals, improvement priorities, and alternatives (requiring intensive communication and active stakeholder participation); specification of an improvement program and its main activities (based on priorities defined with the stakeholders); assessment of possible impacts of the improvement program; definition and detailed specification of key projects and their implementation; continuous monitoring of improvement activities, feedback, and adjustment of the programme (including technical and economic information and perceptions of stakeholders).

The graphical scheme of the Detailed Urbanist Plan for a settlement within the Municipality of Aerodrom within the City of Skopje, Republic of Macedonia.

Application

CoSGOP has been applied in European cross-border policy programming, as well in local and regional development programming. In 2004, the CoSGOP model was applied in the LUDA Project, starting with an analysis of the European experience of urban regeneration projects.

References

Collaborative planning in the United States

Collaborative planning arose in the US in response to the inadequacy of traditional public participation techniques to provide real opportunities for the public to make decisions affecting their communities. Collaborative planning is a method designed to empower stakeholders by elevating them to the level of decision-makers through direct engagement and dialogue between stakeholders and public agencies, to solicit ideas, active involvement, and participation in the community planning process. Active public involvement can help planners achieve better outcomes by making them aware of the public's needs and preferences and by using local knowledge to inform projects. When properly administered, collaboration can result in more meaningful participation and better, more creative outcomes to persistent problems than can traditional participation methods. It enables planners to make decisions that reflect community needs and values, it fosters faith in the wisdom and utility of the resulting project, and the community is given a personal stake in its success.

Experiences in Portland and Seattle have demonstrated that successful collaborative planning depends on a number of interrelated factors: the process must be truly inclusive, with all stakeholders and affected groups invited to the table; the community must have final decision-making authority; full government commitment (of both financial and intellectual resources) must be manifest; participants should be given clear objectives by planning staff, who facilitate the process by providing guidance, consultancy, expert opinions, and research; and facilitators should be trained in conflict resolution and community organization.

Aspects

Aesthetics

Towns and cities have been planned with aesthetics in mind. Here in Bath, England, 18th-century private sector development was designed to appear attractive.

In developed countries, there has been a backlash against excessive human-made clutter in the visual environment, such as signposts, signs, and hoardings. Other issues that generate strong debate among urban designers are tensions between peripheral growth, housing density and new settlements. There are also debates about the mixing tenures and land uses, versus distinguishing geographic zones where different uses dominate. Regardless, all successful urban planning considers urban character, local identity, respects heritage, pedestrians, traffic, utilities and natural hazards.

Planners can help manage the growth of cities, applying tools like zoning and growth management to manage the uses of land. Historically, many of the cities now thought the most beautiful are the result of dense, long lasting systems of prohibitions and guidance about building sizes, uses and features. These allowed substantial freedoms, yet enforce styles, safety, and often materials in practical ways. Many conventional planning techniques are being repackaged using the contemporary term smart growth.

There are some cities that have been planned from conception, and while the results often don't turn out quite as planned, evidence of the initial plan often remains.

Safety

The medieval walled city of Carcassonne in France is built upon high ground to provide maximum protection from attackers.

Historically within the Middle East, Europe and the rest of the Old World, settlements were located on higher ground (for defense) and close to fresh water sources. Cities have often grown onto coastal and flood plains at risk of floods and storm surges. Urban planners must consider these threats. If the dangers can be localised then the affected regions can be made into parkland or green belt, often with the added benefit of open space provision.

Extreme weather, flood, or other emergencies can often be greatly mitigated with secure emergency evacuation routes and emergency operations centres. These are relatively inexpensive and unintrusive, and many consider them a reasonable precaution for any urban space. Many cities will also have planned, built safety features, such as levees, retaining walls, and shelters.

In recent years, practitioners have also been expected to maximize the accessibility of an area to people with different abilities, practicing the notion of "inclusive design," to

anticipate criminal behaviour and consequently to "design-out crime" and to consider "traffic calming" or "pedestrianisation" as ways of making urban life more pleasant.

Some city planners try to control criminality with structures designed from theories such as socio-architecture or environmental determinism. Refer to Foucault and the Encyclopedia of the Prison System for more details. These theories say that an urban environment can influence individuals' obedience to social rules and level of power. The theories often say that psychological pressure develops in more densely developed, unadorned areas. This stress causes some crimes and some use of illegal drugs. The antidote is usually more individual space and better, more beautiful design in place of functionalism.

Oscar Newman's defensible space theory cites the modernist housing projects of the 1960s as an example of environmental determinism, where large blocks of flats are surrounded by shared and disassociated public areas, which are hard for residents to identify with. As those on lower incomes cannot hire others to maintain public space such as security guards or grounds keepers, and because no individual feels personally responsible, there was a general deterioration of public space leading to a sense of alienation and social disorder.

Jane Jacobs is another notable environmental determinist and is associated with the "eyes on the street" concept. By improving 'natural surveillance' of shared land and facilities of nearby residents by literally increasing the number of people who can see it, and increasing the familiarity of residents, as a collective, residents can more easily detect undesirable or criminal behavior. However, this is not a new concept. This was prevalent throughout the middle eastern world during the time of Mohamad. It was not only reflected in the general structure of the outside of the home but also the inside. (refer to various religious texts and archaeological sites)

The "broken-windows" theory argues that small indicators of neglect, such as broken windows and unkempt lawns, promote a feeling that an area is in a state of decay. Anticipating decay, people likewise fail to maintain their own properties. The theory suggests that abandonment causes crime, rather than crime causing abandonment.

Some planning methods might help an elite group to control ordinary citizens. Haussmann's renovation of Paris created a system of wide boulevards which prevented the construction of barricades in the streets and eased the movement of military troops. In Rome, the Fascists in the 1930s created *ex novo* many new suburbs in order to concentrate criminals and poorer classes away from the elegant town.

Other social theories point out that in Britain and most countries since the 18th century, the transformation of societies from rural agriculture to industry caused a difficult adaptation to urban living. These theories emphasize that many planning policies ignore personal tensions, forcing individuals to live in a condition of perpetual extraneity to their cities. Many people therefore lack the comfort of feeling "at home" when at home. Often

these theorists seek a reconsideration of commonly used "standards" that rationalize the outcomes of a free (relatively unregulated) market.

Slums

The rapid urbanization of the last century caused more slums in the major cities of the world, particularly in developing countries. Planning resources and strategies are needed to address the problems of slum development. Many planners are calling for slum improvement, particularly the Commonwealth Association of Planners. When urban planners work on slums, they must cope with racial and cultural differences to ensure that racial steering does not occur.

Slum were often "fixed" by clearance. However, more creative solutions are beginning to emerge such as Nairobi's "Camp of Fire" program, where established slum-dwellers promise to build proper houses, schools, and community centers without government money, in return for land on which they have been illegally squatting on for 30 years. The "Camp of Fire" program is one of many similar projects initiated by Slum Dwellers International, which has programs in Africa, Asia, and South America.

Decay

Urban decay is a process by which a city, or a part of a city, falls into a state of disrepair and neglect. It is characterized by depopulation, economic restructuring, property abandonment, high unemployment, fragmented families, political disenfranchisement, crime, and desolate urban landscapes.

During the 1970s and 1980s, urban decay was often associated with central areas of cities in North America and Europe. During this time, changes in global economies, demographics, transportation, and policies fostered urban decay. Many planners spoke of "white flight" during this time. This pattern was different than the pattern of "outlying slums" and "suburban ghettos" found in many cities outside of North America and Western Europe, where central urban areas actually had higher real estate values.

Starting in the 1990s, many of the central urban areas in North America have been experiencing a reversal of the urban decay, with rising real estate values, smarter development, demolition of obsolete social housing and a wider variety of housing choices.

Reconstruction and renewal

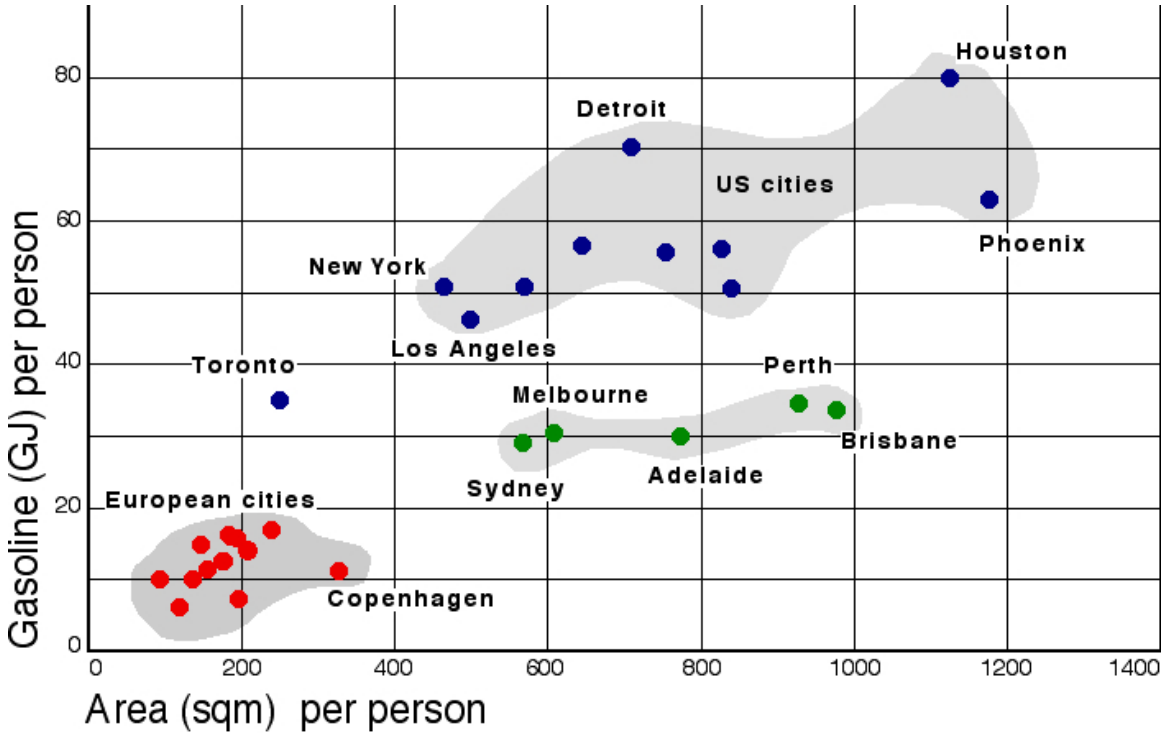
The overall area plan for the reconstruction of Kabul's Old City area, the proposed Kabul - City of Light Development.

Areas devastated by war or invasion challenge urban planners. Resources are scarce. The existing population has needs. Buildings, roads, services and basic infrastructure like power, water and sewerage are often damaged, but with salvageable parts. Historic, religious or social centers also need to be preserved and re-integrated into the new city plan. A prime example of this is the capital city of Kabul, Afghanistan, which, after decades of civil war and occupation, has regions of rubble and desolation. Despite this, the indigenous population continues to live in the area, constructing makeshift homes and shops out of salvaged materials. Any reconstruction plan, such as Hisham Ashkouri's City of Light Development, needs to be sensitive to the needs of this community and its existing culture and businesses.

Urban Reconstruction Development plans must also work with government agencies as well as private interests to develop workable designs.

Transport

Very densely built-up areas require high capacity urban transit, and urban planners must consider these factors in long term plans(Canary Wharf tube station).



Although an important factor, there is a complex relationship between urban densities and car use.

Transport within urbanized areas presents unique problems. The density of an urban environment increases traffic, which can harm businesses and increase pollution unless properly managed. Parking space for private vehicles requires the construction of large parking garages in high density areas. This space could often be more valuable for other development.

Good planning uses transit oriented development, which attempts to place higher densities of jobs or residents near high-volume transportation. For example, some cities permit commerce and multi-story apartment buildings only within one block of train stations and multilane boulevards, and accept single-family dwellings and parks farther away.

Floor area ratio is often used to measure density. This is the floor area of buildings divided by the land area. Ratios below 1.5 are low density. Ratios above five very high density. Most exurbs are below two, while most city centres are well above five. Walk-up apartments with basement garages can easily achieve a density of three. Skyscrapers easily achieve densities of thirty or more.

City authorities may try to encourage higher densities to reduce per-capita infrastructure costs. In the UK, recent years have seen a concerted effort to increase the density of residential development in order to better achieve sustainable development. Increasing development density has the advantage of making mass transport systems, district heating

and other community facilities (schools, health centres, etc.) more viable. However critics of this approach dub the densification of development as 'town cramming' and claim that it lowers quality of life and restricts market-led choice.

Problems can often occur at residential densities between about two and five. These densities can cause traffic jams for automobiles, yet are too low to be commercially served by trains or light rail systems. The conventional solution is to use buses, but these and light rail systems may fail where automobiles and excess road network capacity are both available, achieving less than 2% ridership.

The Lewis-Mogridge Position claims that increasing road space is not an effective way of relieving traffic jams as latent or induced demand invariably emerges to restore a socially-tolerable level of congestion.

Suburbanization

Low (auto-oriented) density suburban development near Colorado Springs, Colorado, United States

In some countries, declining satisfaction with the urban environment is held to blame for continuing migration to smaller towns and rural areas (so-called urban exodus). Successful urban planning supported Regional planning can bring benefits to a much

larger hinterland or city region and help to reduce both congestion along transport routes and the wastage of energy implied by excessive commuting.

Environmental factors

Environmental protection and conservation are of utmost importance to many planning systems across the world. Not only are the specific effects of development to be mitigated, but attempts are made to minimize the overall effect of development on the local and global environment. This is commonly done through the assessment of Sustainable urban infrastructure and microclimate. In Europe this process is known as a Sustainability Appraisal.

In most advanced urban or village planning models, local context is critical. In many, gardening and other outdoor activities assumes a central role in the daily life of citizens. Environmental planners focus now on smaller and larger systems of resource extraction and consumption, energy production, and waste disposal. A practice known as Arcology seeks to unify the fields of ecology and architecture, using principles of landscape architecture to achieve a harmonious environment for all living things. On a small scale, the eco-village theory has become popular, as it emphasizes a traditional 100-140 person scale for communities.

An urban planner can use a number of quantitative tools to forecast impacts of development on the environmental, including roadway air dispersion models to predict air quality impacts of urban highways and roadway noise models to predict noise pollution effects of urban highways. As early as the 1960s, noise pollution was addressed in the design of urban highways as well as noise barriers. The Phase I Environmental Site Assessment can be an important tool to the urban planner by identifying early in the planning process any geographic areas or parcels which have toxic constraints.

Tall buildings in particular can have a substantial effect in channelling winds and shading large areas. The microclimate around the building will typically be assessed as part of the environmental impact assessment for the building.

Light and sound

The **urban canyon effect** is a colloquial, non-scientific term referring to street space bordered by very high buildings. This type of environment may shade the sidewalk level from direct sunlight during most daylight hours. While an oft-decried phenomenon, it is rare except in very dense, hyper-tall urban environments, such as those found in Lower and Midtown Manhattan, Chicago's Loop and Kowloon in Hong Kong.

In urban planning, sound is usually measured as a source of pollution. Another perspective on urban sounds is developed in Soundscape studies emphasising that sound aesthetics involves more than noise abatement and decibel measurements. Hedfors coined 'Sonotope' as a useful concept in urban planning to relate typical sounds to a specific place.

Light pollution has become a problem in urban residential areas, not only as it relates to its effects on the night sky, but as some lighting is so intrusive as to cause conflict in the residential areas and paradoxically intense improperly installed security lighting may pose a danger to the public, producing excessive glare. The development of the full cutoff fixture, properly installed, has reduced this problem considerably.

Process

Blight may sometimes cause communities to consider redeveloping and urban planning.

Prior to the 1950, Urban Planning was seldom considered a unique profession. Planning focused on top-down processes by which the urban planner created the plans. The planner would know architecture, surveying, or engineering, bringing to the town planning process ideals based on these disciplines. They typically worked for national or local governments.

Changes to the planning process Strategic Urban Planning over past decades have witnessed the metamorphosis of the role of the urban planner in the planning process. More citizens calling for democratic planning & development processes have played a huge role in allowing the public to make important decisions as part of the planning process. Community organizers and social workers are now very involved in planning

from the grassroots level. The term advocacy planning was coined by Paul Davidoff in his influential 1965 paper, "Advocacy and Pluralism in Planning" which acknowledged the political nature of planning and urged planners to acknowledge that their actions are not value-neutral and encouraged minority and under represented voices to be part of planning decisions.

Ozawa and Seltzer (1999)advocate a communicative planning model in education to teach planners to work within the social and political context of the planning process. In their paper "Taking Our Bearings: Mapping a Relationship among Planning Practice, Theory, and Education," the authors demonstrate the importance of educating planners beyond the rational planning model in which planners make supposedly value-neutral recommendations based on science and reason. Through a survey of employers, it was found that the most highly rated skills in entry-level professional hiring are communication-based. The results suggest this view of planning as a communicative discourse as a possible bridge between theory and practice, and indicate that the education of planners needs to incorporate synthesis and communication across the curriculum.

Developers have also played huge roles in development, particularly by planning projects. Many recent developments were results of large and small-scale developers who purchased land, designed the district and constructed the development from scratch. The Melbourne Docklands, for example, was largely an initiative pushed by private developers to redevelop the waterfront into a high-end residential and commercial district.

Recent theories of urban planning, espoused, for example by Salingaros see the city as a adaptive system that grows according to process similar to those of plants. They say that urban planning should thus take its cues from such natural processes.