

INTRODUCTION TO GEOGRAPHICAL THOUGHT

Block

3

THE REGIONAL CONCEPT

Unit 5

Landscape and Region

Unit 6

Geography as Spatial Science

Glossary

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BLOCK 3: THE REGIONAL CONCEPT

The regional concept is at the heart of geographical knowledge, where the basic premise of geographical studies lies in the region. Similarly, the landscape is also a very important part of geography, which originated in the realm of cultural geography and is believed to have its genesis in the interaction between topography and human activities perceived as a portion of land with its visible outer appearance with natural and cultural reflections. There are both natural as well as cultural landscapes. Another concept, 'Space' has also been a core of geographical studies. It has been varying with its changing philosophical tradition from absolute to relative and imagined space or perceived space. This block gives an overview of the concepts of landscape and region as a part of the regional concept, space with its types, and space and place, which are the foundations of geographical studies. It also focuses on the study of geography as spatial science along with the discourse on Modern and Post-Modern Geography.

This Block has two Units – 1. Unit 5: Landscape and Region and 2. Unit 6: Geography as Spatial Science.

Unit 5: Landscape and Region deals with landscape, changing perspectives of landscapes, natural and cultural landscapes, landscape chronology, definition and types of region with formal and functional regions.

Unit 6: Geography as Spatial Science covers the sub-themes of meaning and types of space including absolute space, relative space and relational space, geography as spatial science, processes in space and place, territoriality, globalisation and spatial interdependence; gender, space and place; and Modern and Post-Modern Geography as a concluding discourse.

It is expected that the students will have good exposure to the concepts of landscape and region, changing perspectives of landscapes, natural and cultural landscape with landscape chronology, definition and types of regions with special reference to formal and functional regions; meaning and types of space, spatial processes, study of geography as spatial science, meaning of territoriality and globalisation as spatial interdependence process, gender interface with space and place and modern and postmodern conceptions of space.

LANDSCAPE AND REGION |

Structure

5.1	Introduction Expected Learning Outcomes	5.5	Region: Definition and Types Formal and Functional Regions
5.2	Changing Perspectives of Landscapes	5.6	Summary
5.3	Natural and Cultural Landscapes	5.7	Terminal Questions
5.4	Landscape Chronology	5.8	Answers
		5.9	References and Further Reading

5.1 INTRODUCTION

The concept of landscape received greater impetus in the realm of cultural geography. It was then conceived as the cultural entity that resulted out of the interaction between topography and human activities. Carl O. Sauer propagated this idea into cultural geography and said that the cultural landscape is the end result where the agent for change is culture and the medium is natural landforms or areas. The landscape is perceived in terms of a portion of land with its visible outer appearance with natural and cultural reflections. The natural landscape includes the landforms like mountains, hills, plateaus, plains, coasts, deserts, water bodies, soils, vegetation, etc. Cultural landscapes include cultural features or human creations over the natural landscape. Similarly, a region is the basis of geographical studies, which is a piece of land with homogeneity in one or a combination of physical or cultural criteria. You have already studied the foundation of geography, perspectives of geography, the classical period of modern geography, and the period of integration in previous Units. In this Unit, you will study the concepts of landscape and region as a part of the regional concept, which are the foundations of geographical studies.

Expected Learning Outcomes

After studying this unit, you should be able to:

- explain the concepts of landscape and region;
- elaborate the changing perspectives of landscapes;

- explain the natural and cultural landscapes with landscape chronology; and
- discuss the definition and types of regions with special reference to formal and functional regions.

5.2 CHANGING PERSPECTIVES OF LANDSCAPES

The concept landscape has travelled a long distance in academic discussion to reach its present destination and the journey is still far from over. The journey started in Greek antiquity with the concept of “Area” -a plane surface with two dimensions i.e. length and width. Translating the German ‘*Landschaft*’ as ‘landscape’ without qualification has lent much unnecessary confusion in the English language. The German word *Landschaft* has been commonly used to imply either the appearance of land as we perceive it or simply a restricted piece of land. However, they (German) preferred to use the term to indicate an area of land intermediate in size, smaller in size than an area – claiming that “a region may connote a larger piece of area than the geographer may wish to select as a unit, ‘landscape’ suggest a very much smaller piece.” On the contrary, Kerbs urges that the distinction between Land and *Landschaft* is not of size. The suffix ‘land’ is used for larger areas such as England, while the same is used for much smaller units such as Siegerland. In his opinion, *Landschaft* refers to certain aspects of its character that are considered typical of many similar areas. For example, the particular character of the Alps as a mountain area may be called as the Alpine *Landschaft*, which may be found in other parts of the world, whereas the Land, or region, of the Alps, is unique. Thus, *landschaft* or its English translation presents a classificatory typology based on the similarity of characteristics. One may, therefore, conclude that until the mid 20th century German scholars used *landschaft* to develop a framework of geography as a landscape science that could be utilised in the identification and classification of distinctive natural and cultural landscapes. Carl O. Sauer used the term *landschaft* to establish a definition of geography as a science of landscape that evolves through interactions between human cultures and natural environments. Hartshorne is of the view that the incorporation of both objective and subjective elements in the conceptualisation of landscape is not scientific. But engagements with the concept of landscape continued much longer after World War II. The proponents of Sauerian cultural geography began to enquire into the everyday lived-in world and a repository of the symbolic and iconic meaning of landscape; almost joining hands with the humanistic agenda in geography during the 1970s. In the late 1980s and 90s, Cosgrove (1998) and Daniels (1988) prompted an innovative definition of landscape as a way of seeing and representing the world. Gillian Rose (1993) further advanced the definition by stating that the landscape way of seeing was particularly the Masculinist gaze. Engagement with the concept and methodological developments therein continue to bring about new innovative ideas in the 21st century.

SAQ I

What departure is marked in the changing perspectives of a landscape?

5.3 NATURAL AND CULTURAL LANDSCAPES

The geographers in America particularly, the Berkeley School of California under the leadership of Carl Ortwin Sauer emerged as pioneers and suggested that 'Landscape' is a more encompassing and appropriate tool of analysis in geography as compared to the identification of 'Regions', particularly, Economic and Resource Regions. Moreover, geographers across the world academia though did not agree with Sauer yet they realised the dangers of over-quantification and predominance of instrumental (technological) rationality and felt concerned about the theoretical impoverishment of the discipline and pleaded the advantages of practical, human and emancipatory rationality. These aspects got fresh impetus under the cultural turn in geography. Scholars in France particularly Henry Lefebvre and Frankfurt School in Germany advocated the concept of Space in place of Region, which was taken to new heights by the Post Modernists like Edward Soja and others. According to Soja, geography has to transit from the modernist binary episteme in order to elude the politics of polarity and emerge as the "other" to the existing binaries by simultaneously incorporating the real, the imagined and more. It is more, because, it contains the binary conceptualisation between lived and experiential spaces along with other dimensions in the Third Space. While elaborating on the concept of the Third Space, Soja formulated the two concepts of trialectics in place of dialectics: Trialectics of Ontology of Being and Trialectics of Spatiality. The former is constituted by Spatiality, Sociality and Historicity and the latter is constituted by Lived, Conceived and Perceived Spaces. The repercussions of these were also articulated by the geographers in the Orient who advocated the concept of Space and Place (Yi- Fu-Tuan) as complementary to each other. Tuan emphasised that Place and Space are not only inseparable but also one is inconceivable without the other. Place provides security and empowers with a strong sense of belonging and Space protects our rights and exercise of freedom. Thus, both are inseparable from the lives of a free individual.

There are no doubts that Space as a concept brought in rich theoretical rigours in geography but over-emphasis on theory and abstraction placed the discipline at one extreme, the other being over-quantification of region as an analytical concept or a simple container of wealth, culture, power and legality. Therefore, there was a need to find the middle ground to harness the advantages of both concepts and minimise their limitations. The geographers found it convenient to resurrect the concept of Cultural Landscape formulated by Sauer. The imperatives of re-emphasising the cultural landscape were to include humans as an inseparable part of the Landscape: Natural and Cultural. For Sauer, the division between the Natural and Cultural Landscapes was artificial and exclusionary, while for him geography is an inclusive discipline. According to him, Natural Landscape constitutes the physical attributes of the environment both biotic and abiotic, while the cultural landscape constitutes the activities of human beings to make their collective social existence possible by constantly interacting and modifying social relations and transforming the Natural Landscape into human artifact, i.e. cultural landscape. The evolution of the Cultural Landscape is not unilateral as far as human beings are concerned. It is the result of conscious human interaction with the natural environment.

5.3.1 Carl O. Sauer and Landscape

As mentioned before, landscape as a concept in geography travelled a long distance symbolising different things (objects) in diverse contexts. However, in the conceptualisation of landscape with its present meaning, the credit goes to Carl O. Sauer. He postulated the concept to provide an alternative to the then most popular current of Environmental Determinism in geography, on the one hand, and obsession with fragmented and incoherent knowledge in the name of regions and regional approach to geography, on the other.

According to Sauer “geography assumes the responsibility for the study of areas because there exists a common curiosity about that subject” (Sauer, 1983, p. 316). It is similar to the curiosities people have about plants (Botany) and rocks (Geology) etc., which no other subject (discipline) is able to address. Unlike the environmental determinists limiting the scope of geography to unravel the causal influence of the environment on humans, Sauer while downplaying the subjective aspects associated with landscape, foregrounded human impacts on the environment. To him, the landscape was an objective area, which can be studied scientifically through observation and experiments. He advocated that geographers should proceed genetically and trace the development (transformation) of a natural landscape into a cultural landscape. Taking the concept of region as an analytical category in geography he postulated that “geography can be an independent science only as chorology primarily concerned with knowledge about varying expression of the different parts of the earth’s surface. Such an approach will only contribute to making geography an auxiliary science, which compiles fragmentary evidence to find its place among other branches of knowledge. To survive as a meaningful and complete branch of knowledge “We assert the place for science that finds its entire field in the landscape on the basis of the significant reality of chorological relations. The phenomena that make up an area are not simply assorted but are associated, or interdependent” (Sauer, 1983, p. 318).

Therefore, it is the task of the geographers and they should devote their energy to discover this areal connection of the phenomena, their order and ultimately delineate the area as an expression of coherence. He was critical of the casual approach adopted by geographers in simply identifying a region, which he called trivial and simply descriptive rather than critical and analytical. While appreciating the contributions made by instruments for precision measurements particularly in the field of navigation, survey and morphological representation of the earth’s surface involving not only physical morphology but also the cultural expression of landscape, he had reservations about the outcomes of such precisions. Furthermore, he also warned misuse of techniques by geographers. Over-emphasis on one aspect either nature or culture is bound to sacrifice the complex reality of areal association either to a rigorous dogma of materialistic cosmology or abstract theorisation. He was in favour of representing “reality as a whole that is not expressed by a consideration of the constituent parts separately, that has a form, structure and function and hence position in a system. Without this view of areal reality and relation, there exist only special disciplines, not geography as generally understood” (Sauer, 1983, p. 321). Thus, geography to him is far beyond

simple aggregation of parts (regions). This according to him is possible by adopting a Landscape Approach against the regional approach.

Landscape according to Sauer is an English equivalent of the German concept '*Landschaft*' symbolising land shape, in which the process of shaping is by no means thought of as a simple physical entity. It is an "area made up of a distinct association of forms, both physical and cultural.... The facts of geography are place facts; their association gives rise to the concept of landscape" (Sauer, 1983, p. 321). It is similar to time facts in history and it is the association of these time facts that gives the concept of period in history. Therefore, "landscape has identity that is based on recognisable constitution, limits, and generic relation to other landscapes, which constitute a general system. Its structure and function are determined by integrant and dependent forms. The landscape is considered, therefore, in a sense having an organic quality" (Sauer, 1983, p. 322). Meaning thereby, every landscape is generic, and has its individuality as well as relation to other landscapes, which no other concept including area, region and space is capable of assimilating within its fold. Moreover, the identity of the landscape is determined first of all by the conspicuousness of "correct representation of the surface form, of soil, and of superficially conspicuous masses of rocks, of plant cover and water bodies, of the coasts and the sea, of areally conspicuous animal life and of the expression of human culture is the goal of geographical enquiry" (Sauer, 1983, p. 324).

Geographers unlike researchers in other branches of knowledge are interested in that part of the areal scene that concerns us as human beings because we are part of it, live with it, are limited by it and modify it. Thus we select those qualities of landscape in particular that are or may be of use to us and relinquish other facts that are of no concern in relation to man to his area (Sauer, 1983, p. 325). Finally, geography is interested in "cultures that grow with original vigour out of the lap of a maternal natural landscape, to which each is bound in the whole course of its existence. Geography is based on the reality of the union of physical and cultural elements of the landscape (Sauer, 1983, p. 325). For him, landscape is an organic entity (quality) and one can never understand its nature fully "until one has learnt to see it as an organic unit, to comprehend land and life in terms of each other" (Sauer, 1983, p. 322).

To summarise his notion of landscape, Sauer postulated the following feature integral to it: Landscape is an organic unit made up of land and life constantly interacting with each other. It is a generic unit and not a simple account of an observer. On the contrary, the observed landscape exists as a variant, different from types and always precedes by comparison beginning with, coherence and order. Though, it has its own individuality as well as relations to other landscapes, it has infinite diversity, and salient and related features that help it in establishing its own characteristic features along with its place in the system.

The geographical methods according to him, however imperfect, are based on induction dealing with the understanding of sequences and not mapping simple causal relations. It is distinctly anthropocentric, that is the use of earth to man, symbolising the unity of physical and cultural elements of the

landscape. The geographical enquiry should begin with the repression of preconceived notions along with a priori theory concerning the landscape and build the narrative by massing and ordering phenomena as forms that are integrated into structures. A comparative study of the data thus organised constitutes the morphologic methods of synthesis, which is a special kind of empirical method. In his inductive approach, Sauer recommended the application of the Morphological Method in dealing with the landscape with the following three postulates:

- i. There is a unit of organic or quasi-organic quality; that is, a structure to which certain components are necessary, these component elements are called 'forms';
- ii. Similarity of form in different structures is recognised because of functional equivalence, the forms then being 'homologous'; and
- iii. The structural element may be placed in series, especially into a developmental sequence, ranging from incipient to the final or completed stage. (Sauer, 1983, p. 326)

These postulates in no way make it imperative that the morphological studies must adhere to general biological laws without affirming the concept of a landscape as an organism in a biological sense, though the organic analogy has proved most useful in the entire field of its enquiry. This aspect he considered important to distance his concept of landscape from the organismic theory of the state particularly under the Nazis during the first half of the last century.

SAQ 2

What are natural and cultural landscapes?

5.4 LANDSCAPE CHRONOLOGY

We have already noted that Otto Schluter admitted to the importance of studying change over time in the study of landscape, but only as its secondary concern. Carl O. Sauer in his conceptualisation of cultural landscape was concerned with temporal changes. In French regional geography, landscape chronology or reconstruction of former landscape types was important for regional synthesis. Landscape chronology is concerned with understanding the development of landscapes over time on the basis of relict elements in the contemporary landscape. In other words, it studies the forms and then goes on to decipher the processes. Landscape chronology might also include the concept to sequent occupance as proposed by Derwent Whittlesay (1929). It meant stages in the development of an area/region/landscape often brought about by a new immigrant culture.

In a nutshell, landscape chronology is the history of landscape and its study or the evolution of landscape. It is the scientific reconstruction of previously existing landscapes for explaining the evolution of landscapes.

SAQ 3

What is landscape chronology?

5.5 REGION: DEFINITION AND TYPES

'Region' was not only quantitatively much larger than an area, but it was also qualitatively different. Since area was a simulacrum it was universal over time and space. As compared to this, region was always specific, dynamic and defined by its boundary. Moreover, unlike 'area' which was always exclusive, 'region' is inclusive and encompassing, ranging from the physical (natural, geographical), socio-cultural, political, economic, historical, etc., components. However, true to the obsession of the age emphasising exclusively the aspects of homogeneity, a region as a concept could not afford to remain unaffected by it and embraced the principles of uniformity and homogeneity as the basic criterion. "Region is a cohesive area that is homogenous in selected defining criteria and is distinguished from neighbouring areas or regions by those criteria". Unlike an area, a region is defined by its boundaries, which are determined by the homogeneity and cohesiveness of the selected criteria. Therefore, an area which can stand alone, a region presupposes the existence of other regions, possessing dissimilar characteristics (heterogeneity). It is an exercise of creating the 'spatial other', which is conspicuous by its absence in the case of an area. The criteria for creating the other may be on the basis of a single feature called single feature region, multi-feature region and on the basis of nodality called a nodal region. Some of the common examples of regions in geographical studies are physiographic, climatic, resources, social, cultural, economic, political, climatic, administrative regions, etc. These ambiguities have been expressed by some geographers in the following ways:

1. *The Region is an area of the earth surface.* – Taylor.
2. *A region is an unit area of the earth surface differentiated by its specific characteristics.* - F. J. Monkhouse.
3. *Any surface over the earth surface where physical conditions are homogenous is region.* - Woolfgang & Joerg.
4. *Regions are genuine entities, each of which expresses both natural and cultural differentiation from its neighbours.* - G. T. Ranner.
5. *A region is a complex of land, water, air, plant, animal and man, regarded under their spatial relationship as together constituting a definite portion of earth surface* - A .J. Herbertson.
6. *A region is a domain where many dissimilar things are artificially brought together have subsequently adopted themselves to a common existence.* –Paul Vidal de La Blache.
7. *A region is an area of specific location which in some way very distinctive from other areas and which extends as far as the distinction extends.* - Richard Hartshorne.

8. *A region is an area within which the combinations of environment and demographic factors have erected homogeneity of economic and social structure.* - T.T. Woofer.
9. *Region is an area delineated on the basis of homogeneity of land – character and occupance.* - R.S. Platt.
10. *Region is an ecological aggregation of persons and economic framework and cultural order. It is at once a faithful expression of the distribution of population, resource, occupation and the inter-related cultural unity.* - R.K. Mukherjee.
11. *Regions are a shorthand way of describing the variable character of an area in an efficient manner* - Peter Haggett.

It is evident from the above definitions that there exist marked differences among geographers about conceptualising and defining regions. Since over-emphasis on abstraction and rigidity restricted the usefulness of area, it was expected that the flexibility inbuilt within the region would make it more appropriate. However, too much flexibility has its own limitations and may prove counterproductive in its analytical rigour including putting a new set of restrictions which in turn is likely to open the scope to exercise power not only to define a region other than objective criterion but also create artificial and arbitrary bases of delineating regions such as race, ethnicity, intelligence, living space (lebensraum), genetic material, etc. The most glaring example of it was during the rise of Nation-States when regions were identified on the bases of citizenship, sovereignty, ideology and constitutionalism, etc., which pushed other criteria to the margins and recognised political regions as valid and legitimate.

The theatre of these regional exercises was the Nation-States mostly from North Atlantic, but the price for the success of this experiment was borne by the colonies. Modern history is a testimony to the facts that the rise and growth of Nation-States as a political region in the North Atlantic Region happened at very high social, economic, cultural and ecological costs, particularly in the Equatorial, Tropical and Subtropical regions. Ruthless domination of these regions continued over centuries until it was resisted by the indigenous people in the Twentieth century. The success of the Bolshevik Revolution in Russia proved a major landmark event in world history between colonisation and decolonisation particularly after World War II. A spectacular performance of the Soviets during the Inter-War Period largely due to its planned development provided much required impetus to development with social justice without resorting to the path of an exploitative model of capitalist development. One of the most significant factors in the success of Soviet development was the emphasis on economic regions for planned development against free market economies. Since most of these post-colonial countries had serious limitations in implementing the Soviet Model, they tried incorporating appropriate modifications as per their needs. Incorporations of the socio-cultural and historical specificities of the region in the development was the most significant imperative for them along with thorough interrogation of the concept of 'region' itself. Some of the pertinent questions regarding the regions are:

- a. Identity of Region.

- b. Objectives of Region.
- c. Taxonomy of Region.
- d. Methodology of Region.

a. Identity of Region

Region unlike area is a dialectical phenomenon. Meaning thereby, a region presupposes the existence of other region(s). No region exists in isolation. It is imperative for a region to have the following attributes to exist: Its unique textual features and their relative homogeneity across its time and spatial dimensions. It's discernible contextual heterogeneities from the surrounding regions in terms of their textual features across time and spatial dimensions. Region is a process of 'spatial othering'. Meaning thereby, the identity of a region reinforces the existence of other regions in relation to the following two assumptions:

- i. Are regions unique in terms of the attributes they possess? and,
- ii. Do the interrelationships among these attributes contribute to reinforcing the uniqueness of the given region(s)?

b. Objectives of Region

Geographers have diverse opinions about the objectives of a region. There are some who believe that the demarcation and delineation of a region is an end in itself and the main task of a geographer is to evolve an objective methodology for the identification of a region. Meaning thereby, the geographical studies should help in the identification/demarcation of region(s) and it should be left to other researchers within and across disciplines to use the regional frame to conduct their research further. The basic assumption behind such thinking is that quintessentially a region is a container which geographers should identify, make it static within a given techno-institutional frame and leave it to other scholars to fill the desired information in it. Therefore, in a given context the geographers should identify/construct a relatively permanent frame of reference with geographical coordinates and it is the task of the other scholars to bring in dynamism through incorporating new facts.

There are others who hold diametrically opposite views and contest that identification of the region is only a means to achieve the desired ends. They also contest the behind-the-curtain role assigned to the geographers and argue that means and end are inseparable from each other and artificially separating the two will only dilute the rigour of a dynamic branch of knowledge i.e. geography with its two equally important and interdependent subject matters i.e. nature and culture constantly interacting with each other through a dynamic network of technical and institutional aspects. But above all these, there is their reservation about reducing region as a simple artifact of geographers. Region according to them is a highly versatile analytical as well as epistemological tool.

c. Taxonomy of Region

Based on the differences of opinions about the subject matter and objectives of a region the geographers also have sharp divisions about the classification of regions.

I. Regions Based on Principles

a. Principle of Homogeneity:

- i. Natural Regions: Physiographic Regions, Climatic Regions, Natural Vegetation and Soil Regions, etc.
- ii. Cultural Regions: Linguistic Regions, Regions identified on the bases of belief systems, ethnic compositions, socio-cultural practices, etc.
- iii. Economic Regions: Resource Regions, Industrial Regions, Agricultural Regions, Trade and Transport Regions, etc.

b. Principle of Interlinking:

- i. Flow of Commodities: raw material importing and exporting regions, Trading blocks, technology importing and exporting regions/countries etc.
- ii. Movement of Population: Regions subjected to out-migration (push factor, emigration) and in-migration (pull factor, immigration).
- iii. Flow of Capital: Favourable/ unfavourable balance of payment, flow of remittances, capital importing and exporting regions (countries).
- iv. Flow of Information: Self-sufficient and dependent regions in the generation and processing of information.

c. Size of Region:

- i. Macro Region: Triple Tectonic Regions of India, Water Resources Regions, Climatic Regions, etc.
- ii. Meso Region: River Basins, Watershed and Sub-Watershed.
- iii. Micro Region: Block and District Level Planning Region, spring shed, milli, mini and micro watershed regions.
- iv. Local Region: Village Level Planning Region, Springshed.

d. Principle of Genesis:

- i. Naive Region (specific region): It exists mainly in the myth, culture and beliefs of the native population with strong social acceptance without much objective bases: Idea of homeland, motherland and Geobody.
- ii. Instituted Region: These are created on the bases of administrative convenience and regulated through well-established administrative structures such as districts, blocks, etc. The region exists till the administrative needs it satisfies.
- iii. Denoted Region: These are created for accomplishing specific tasks and become outdated after obtaining the desired objectives such as Planning Regions.

- iv. **Adhoc Region:** Such a region is delineated for meeting certain immediate objectives within a relatively short span of time leaving little scope for the objective assessment of the feasibility of creating such a region. The area of operation and duration of such a region are determined by the magnitude and intensity of the objectives. The main objective of such a region is to provide immediate relief without wasting the 'golden period' in negotiating the institutional and technological bottlenecks. Delineation of a region for the mitigation of damages caused by calamities like earthquakes, tsunamis, floods, cyclones, industrial disasters like the Chernobyl Disaster, Bhopal Gas Tragedy, etc., is one of the examples.

e. Principle of Objectivity:

- i. **Formal Region:** It is also called an objective region demarcated on the bases of facts independent of human efforts. A formal region is an areal entity an end in itself and can be identified and mapped objectively like physiographic regions, vegetation, soil and climatic regions, etc.
- ii. **Functional Region:** It is created on the bases of the objective and purpose. It is subjective in nature. With changes in culture, economy and spatial interaction the functional regions also get modified. Though geographers try to construct the functional regions as objectively as possible based on quantitative facts, there are some elements of subjectivity that continue to persist. Peter Haggett identified six elements of a Function Region: movement, channels, nodes, hierarchy, surface and diffusion. Trade and transport regions and planning regions are some of the common examples of functional regions.
- iii. **Nodal Regions:** A nodal region is a functional region with a difference where a node, mostly a city, exercises its predominance over the activities of the area of its influence. Port is an example of a nodal region.

d. Methodology of Demarcation of Region

The identification of a formal region is simpler than the identification of the functional and nodal regions. Formal regions are demarcated on the basis of the elements of the physical environment such as altitude, elevation, climate, vegetation, soil, drainage and presence of water bodies, etc. As compared to these the demarcation of the functional region involves the opinion, attitude, purpose and subjectivity of the researcher. Therefore, change in the criteria selected for the identification of the region also changes. Christaller's and Losch's Central Place Theory, Zipf's Distance Decay Model, Walter Isard's Gravity Model, Thiessen Polygon Methods, etc., have been very common in geography for the identification of regions. Under the Quantitative Revolution and in the name of multidisciplinary research, the use of Factor and Principal Component Analysis has increased for the demarcation of functional regions in geographical research.

The use of component analysis brought in a quantum jump in the identification of multi-features and multi-dimensional regions but, at a very high cost. The costs were both over-dependent on factual information mostly

quantification at the cost of qualitative data on the one hand which, rendered theory subservient to ever-changing quantitative techniques on the other. Moreover, over-factualisation gave undue advantages to the experts in the use of techniques and marginalised a large number of geographers, who were less comfortable with the new techniques, which consequently, made them vulnerable to obsolescence in the age of fast-changing technologies.

The other equally significant aspect was related to the ideological and political underpinning of the identification of regions. Since Regional Planning formed the bedrock of Socialist Planning in the Soviet Union as an alternative to unplanned market-oriented development under capitalism, most geographers took strong exception to the entry of Marxism and Socialism in geography on the pretext of demarcating regions.

5.5.1 Formal and Functional Regions

Formal Region: As defined above, a Formal Region is an areal entity. It is an end in itself and can be identified and mapped objectively. Examples are physiographic regions, vegetation, soil and climatic regions, cultural regions, linguistic regions, etc. This kind of region is also known as an objective region demarcated on the bases of facts independent of human efforts.

Functional Region: It is an area delineated around certain focal points, especially related to specific functions or services. It is created on the basis of certain objectives and purposes. It gets modified with modifications in culture, economy and spatial interaction. Further, the boundaries of these regions are quantitatively defined and have movement, network, nodes, hierarchy and surface and diffusion as elements. Examples are the region of daily commuters to a certain node or town/city, the region of vegetable and milk supply to the node, newspaper supply from the node to the surroundings, etc.

SAQ 4

What is a region? What is the difference between formal and functional regions?

5.6 SUMMARY

In this unit, you have studied:

- the concepts of landscape and region;
- the changing perspectives of landscapes;
- the details of the natural and cultural landscape;
- the landscape chronology in geography; and
- the definition and types of regions with special reference to formal and functional regions.

5.7 TERMINAL QUESTIONS

1. Write an essay on the concepts and changing perspectives of landscapes.

2. Explain natural and cultural landscapes.
3. Discuss in detail the landscape chronology.
4. What is 'region'? Give a detailed account of their types with examples.

5.8 ANSWERS

Self-Assessment Questions (SAQ)

1. The departure in the perspective of the landscape has taken place from the term 'Area' within the Euclidian Geometry and has reached the idea of Region or Territorial Region.
2. Landscape is an objective area, which can be studied scientifically through observation and experiments (according to Carl O. Sauer). The natural landscapes are those landscapes, which include the landforms like mountains, hills, plateau, plains, coasts, deserts, water bodies, soils, vegetation, etc. Cultural landscapes include the cultural features or human creation over the natural landscape.
3. Landscape chronology is the history of landscape and its study or the evolution of landscape. It is the scientific reconstruction of previous existing landscapes for explaining the evolution of landscapes.
4. A region is the basis of geographical studies, which is a piece of land with homogeneity in one or a combination of physical or cultural criteria. A formal region is an areal entity, which can be identified and mapped objectively based on certain natural or cultural criteria like physiography, rainfall, temperature, soil, vegetation, language, culture, etc. Examples are physiographic regions, vegetation, soil and climatic regions, cultural regions, linguistic regions, etc. A functional region is an area, which is delineated around certain focal points, especially related to a specific function or service, like a market area, newspaper circulation area, milk supply area, certain area catering for health or education, etc.

Terminal Questions

1. Discuss the concepts of landscapes and how the perspective of landscape has changed from an Area to a Region or Territorial Region. Refer to Section 5.2.
2. Define and differentiate natural and cultural landscapes with examples. Refer to Section 5.3.
3. Discuss the chronology or history and evolution of landscape as how the perspectives have changed and also the changing methods of study. Refer to Section 5.4.
4. Define and explain regions with their types. Refer to Section 5.5.

5.9 REFERENCES AND FURTHER READING

1. Sauer, Carl O. (1983): "The Morphology of Landscape", in John Leighly (ed.): *Land and Life –A Selection from writings of Carl O. Sauer*, Berkley: University of California Press.
2. Haggett, Peter (2001): *Geography: A Global Synthesis*, Prentice Hall.
3. Minshull, Roger (2007): *Regional Geography: Theory and Practice*, Chicago: Routledge.
4. Soja, Edward (1989): *Postmodern Geographies: The Reassertion of Space in Critical Theory*, Verso: London.
5. Johnston, R.J. et al (2005): *Dictionary of Human Geography*, Malden USA: Blackwell Publishing.



GEOGRAPHY AS SPATIAL SCIENCE

Structure

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		6.11	Answers
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6.1 INTRODUCTION

Space has always been the key concept of geography, but its meaning and connotations have varied with its changing philosophical tradition. According to Helen Couclelis (1992), 'Geographers are concerned with space not for its own sake, only for what it may mean for the phenomena they study. No other empirical discipline allows space to play such an important role in its approach to the world and in its own self-definition' (Couclelis, p. 216). For example, in classical regional geography, there was a focus on the notion of absolute space, wherein geographers used to divide the earth into homogenous parts known as regions. They studied each part holistically and in detail to bring out their individuality and specificity by describing their absolute location, size, and shape, among other elements. In positivist geography (e.g. quantitative revolution), the relative notion of space became crucial. Unlike absolute space, relative space is not fixed. It has elasticity and therefore, it can expand and shrink. The term space used in this sense refers to time-space and cost-space. In post-positivist traditions, the concept of space has been subject to rigorous interpretations and theorisation. For example, behavioural geographers use such concepts as perceived space, conceived space and mental space. In the previous Units, you have studied

the foundations of geography, its evolution from cosmology to chorology and the concepts of landscape and region. In this Unit we will discuss Geography as Spatial Science including the process in space and places (absolute, relative and relational), territoriality, globalisation and spatial interdependence; gender, space and place, and conceptualisation of space in modern and post-modern geographies.

Expected Learning Outcomes

After studying this unit, you should be able to:

- explain the meaning of space, its types and spatial processes;
- define geography as spatial science;
- explain the meaning of territoriality and globalisation as spatial interdependence process;
- discuss gender interface with space and place; and
- discuss the modern and postmodern conceptions of space.

6.2 SPACE: MEANING AND TYPES

The term space carries many connotations and has been subjected to diverse meanings and interpretations. It is one of the most complex concepts to define. In geography, the term space means extent or area, usually expressed in terms of the earth's surface. More specifically, it refers to a dimension within which matter is located or a grid within which substantive items are contained. It does not mean space in the sense of outer space or space in the sense of the arrangement of things in orderly rows. In geography, the term space is used as an expanse (what is between things) as well as confines (what contains them). In the first sense, space is defined as an area that is empty of any matter. In the second sense, it is defined by the presence of matter.

Knox and Marston (2007) describe three ways of measuring space - absolute, relative and cognitive (and/or relational) terms. Absolute space is a mathematical space described through points, lines, areas, planes and configurations whose relationships can be fixed precisely through mathematical reasoning. There is also another mathematical space, the topological space. This space is defined as the connections or connectivity between points in space. The relative measurements of space can take the form of socio-economic, experiential or cultural space. The socio-economic space consists of sites, situations, routes, regions and patterns. The experiential space consists of a space where groups live and interact. Cognitive space is defined and measured in terms of values, feelings, beliefs and perceptions to which people relate.

Most geographers provide tripartite division of space – absolute, relative and relational. The following section defines all three types of space.

6.2.1 Absolute Space

Perhaps the most obvious way of thinking about space is to think about it as physical reality. We know that objects exist in space. They have a unique

location that can be fixed with the help of latitude and longitude. To overcome the separation between objects, to move between them, or to bring them together, we must exert energy. Space thought of in this way seems an empirical fact, irrefutable and fixed. They are measured in kilometres, miles, geometric patterns, etc. Such a space may be arbitrarily divided into areas. This conception of space is often referred to as absolute space. The concept of absolute space has its origin in Euclidean geometry. It can be described through points, lines, areas, planes and configurations. Their relationships can be fixed precisely through mathematical reasoning. The concept of absolute space is largely associated with classical mechanics and the name of Newton. Absolute space is an empty space and symbolises the idea of the absence of any object. It exists independent of any of the processes operating within it. Instead, it is defined as a material framework (having independent existence) within which such processes occur.

Indeed, locating objects in absolute space was a concern of early explorers and mapmakers and was of great economic and social significance. Knowing where a place was on the surface of the globe was important to the development of trade and to the colonisation of one country by another.

6.2.2 Relative Space

In contrast to the absolute view of space, which is fixed and timeless, the idea of relative space is a dynamic one. According to David Harvey (1994), the relative notion of space is mainly associated with the theories of Albert Einstein and the non-Euclidean geometries that began most systematically in the 19th century. In relative space, the focus is not on the absolute location of objects. Rather it is the relative placement of objects to other objects. According to this view, it is the position of objects in relation to each other that matters more than their actual position. Moreover, as mentioned, the relative position of an object is not fixed. It changes with time with the development of technology. For example, the location of some places in a city, measured in kilometres or miles, may have equidistant locations from the centre of a city. However, one can create completely different maps of relative locations of the same city and the same places therein by differentiating between distances measured in terms of time and cost involved in different modes of travel (walking by foot, bicycle or motorcycle). Given the differential frictions of distance encountered in the city (e.g. width and quality of roads, road blockage, intersections, traffic congestion, etc.) that the shortest distance (measured in terms of time, cost or energy expended) between two points is not necessarily given by the shortest physical (absolute) distance measured in kilometres or miles. Therefore, at the core of relative space is the concept of connection or connectivity between points. Thus, according to Harvey (1994), under the relative view, space still has an independent reality and existence, but in this case, the space shrinks and expands due to smoothness or friction of distance encountered while moving.

6.2.3 Relational Space

The concept of relational space is even quite complex. According to David Harvey (1994), the relational concept of space is most often associated with the name of Leibniz, one of the leaders of German idealism. A contemporary

of Newton, he objected vociferously to Newton's absolute view of space. David Harvey (1994) argues that there is a multiplicity of spaces (at a time) at work in the actual world rather than a singular conception. The notion of relational space is contingent upon the process. There are a multiplicity of processes (contested social practices) operating everywhere in this world. Each process produces its own space. It implies that a multiplicity of processes can in principle be thought of as creating a multiplicity of spatial realities and a heterogeneity of constructed spaces. Different processes often necessarily hang together in ways that make them to relate each other interdependently and generate coherence.

According to Harvey (1994), the task of science is to deal with that multiplicity, discovering its origins in the study of diverse processes rather than assuming with Newton and to some degree Einstein that there was a singular spatio-temporality that could somehow be measured.

David Harvey further states that:

The relational view of space holds there is no such thing as space outside of the processes that define it. Processes do not occur in space but define their own spatial frame. The concept of space is embedded in or internal to the process. This very formulation implies that, as in the case of relative space, it is impossible to disentangle space from time. We must therefore focus on the relationality of space-time rather than on space in isolation. The relational notion of space-time implies the idea of internal relations; external influences get internalised in specific processes or things through time (much as my mind absorbs all manner of external information and stimuli to yield strange patterns of thought including dreams and fantasies as well as attempts at rational calculation). An event or a thing at a point in space cannot be understood by appeal to what exists only at that point. It depends upon everything else going on around it (although in practice usually within only a certain range of influence). A wide variety of disparate influences swirling over space in the past, present and future concentrate and congeal at a certain point to define the nature of that point.

David Harvey says that measurement becomes more and more problematic the closer we move towards a world of relational space-time. But why would it be presumed that space-time only exists if it is measurable and quantifiable in certain traditional ways? This leads to some interesting reflections on the failure (perhaps better construed as limitations) of positivism and empiricism to evolve adequate understandings of spatio-temporal concepts beyond those that can be measured. In a way, relational conceptions of space-time bring us to the point where mathematics, poetry, and music converge.

Why is the relational mode of approaching space-time useful for geographers? On this, Harvey (1994) says that: "The answer is quite simply that there are certain topics, such as the political role of collective memories in urban processes, that can only be approached this way. I cannot box political and collective memories in some absolute space (clearly situate them on a grid or a map) nor can I understand their circulation according to the rules, however sophisticated, of relative space-time. If I ask the question:

what does Tiananmen Square or “Ground Zero” mean, then the only way I can seek an answer is to think in relational terms.”

An interesting theorisation of the meaning of space was made by David Harvey way back in 1973 in his celebrated book, *Social Justice and the City*. He has advanced an extremely useful and ground-breaking understanding of the nature of absolute, relative and relational space. He says space is neither absolute, relative or relational in itself, but it can become one or all simultaneously depending on the circumstances. According to him, the problem of the proper conceptualisation of space is resolved through human practice with respect to it. In other words, there are no philosophical answers to philosophical questions that arise over the nature of space - the answers lie in human practice. The question “what is space?” is therefore replaced by the question “how is it that different human practices create and make use of different conceptualisations of space?” The property relationship, for example, creates absolute spaces within which monopoly control can operate. The movement of people, goods, services, and information takes place in a relative space because it takes money, time, energy, and the like to overcome the friction of distance. Finally, Harvey points out that parcels of land also capture benefits because they contain relationships with other parcels; the forces of demographic, market and rental potential are real enough within an urban system and in the form of rent relational space comes into its own as an important aspect of human social practice.

Thus, whether space is absolute, relative or relational depends on how human beings make use of it. The same space can be absolute in one context but relative or relational in other contexts, depending on human practice.

SAQ I

Differentiate absolute, relative and relational space.

6.3 MEANING OF GEOGRAPHY AS SPATIAL SCIENCE

Geography emerged as spatial science during the 1950s in reaction to the dominant regional paradigm. The term spatial means relating to space or having the character of space. It also stands for relationships between objects in space.

The spatial science tradition was the central focus of much of the quantitative and theoretical geography that developed in the Anglo-American tradition from the 1950s to 1960s. Definition of geography as spatial science clearly aimed at elevating geography to the level of science by not only identifying and mapping patterns of location and distribution of geographical phenomena on the earth’s surface but also providing explanation for the same. In other words, geography as spatial science sought answers to spatial questions, i.e. questions pertaining to location, spatial distribution, spatial interaction,

diffusion and spatial autocorrelation. Some of the important characteristics of spatial science tradition in geography are as follows:

- A paradigm shift in geography from idiographic concern to nomothetic concern
- Strongly positivist in orientation
- Application of statistical and mathematical techniques to measure regularity and order in the spatial location and distribution of phenomena
- Focus on the study of the earth as spatial system
- Formulation and testing of spatial hypotheses
- Seeks generalisations regarding empirical regularities in the spatial organisation
- Analysis and prediction of point, line, flow, and area patterns
- Geometrical regularity and spatial pattern as the focus for the development of geographical theories
- Development of spatial models
- Development of morphological laws for predicting and forecasting spatial pattern
- Applications of GIS and Remote Sensing

The central idea was that there are regularity and order in the way geographical phenomena are located and distributed on the earth's surface (i.e. spatial organisation). The task of geographers is to map and seek a pattern in the spatial organisation of geographical phenomena and provide an explanation for the same by looking at the underlying processes. The following concepts become crucial in the definition of geography as spatial science:

- **Location:** Location is a measure of 'where' things occur in geographical space and why they occur there. Economists such as Alfred Weber, Edgar Hoover, August Lösch (who produced a theory similar to Christaller's) and Tord Palander suggested that manufacturing industries be located to minimise both input costs (including the costs of transporting raw materials to a plant) and distribution costs (getting the final goods to market).
- **Spatial Distribution:** Spatial distribution is a measure of the pattern of distribution of geographical phenomena and forces which shape their distribution. For example, Walter Christaller's Central-Place Theory modelled settlement patterns in rural areas - the number and size of different places/settlements, their spacing, and the services they provided - according to principles of least-cost location.
- **Spatial Interaction:** It is a measure of the nature and intensity of the relationship between geographical places and factors influencing the relationship between places. For example, by applying Newton's 'laws of gravitational attraction' in a spatial context, geographers tried to explain and predict patterns of human interaction (migration flows, commodity

flow, traffic flows, information flows) between settlements of different sizes and distances from one another.

- **Spatial Diffusion:** It is a measure of the spread of geographical phenomena from source regions outward in space over a period of a given time. According to a Swedish geographer, Torsten Hägerstrand, the main centres of innovation tend to be the largest cities, from which new ideas and practices spread down the urban hierarchies and across the intervening non-urban spaces according to the least-cost principles of distance-decay models.
- **Spatial Autocorrelation:** It is a measure of similarity (correlation) between nearby observations, which describes the degree to which observations (values) at spatial locations (whether they are points, areas, or raster cells), are similar to each other.

Thus, in the ultimate analysis, geography aims at developing theories, laws and models, which can describe and explain the occurrence of spatial attributes. Further, the spatial patterns are analysed in relation to the underlying physical, biotic and socio-economic processes. Geographers involved in spatial analysis liberally apply mathematical and statistical techniques to map the exact pattern and processes on the earth's surface.

By the late 1960s, these new practices were synthesised in influential innovative textbooks on both sides of the North Atlantic. After the Hartshorne-Schaefer debate, Geography turned from exceptionalism to spatial science. There was also the influence of the book '*Theoretical Geography*' by William Bunge (1962). The notable contributions include Peter Haggett's *Locational Analysis in Human Geography* (1965), Richard Chorley and Peter Haggett's *Models in Geography* (1967), Ron Abler, John Adams, and Peter Gould's *Spatial Organisation* (1971), and Richard L. Morrill's *The Spatial Organization of Society* (1970) besides those already mentioned in the text above. Morrill argued that people seek to maximise spatial interaction at minimum cost and so bring related activities into proximity- the result is that human society is surprisingly alike from place to place. It is owing to the predictable, organised pattern of locations and interactions.

The recent decades, the development of Remote Sensing and Geographical Information System (GIS) has revolutionised spatial analysis. In particular, GIS has combined hardware and software for the organisation, integration, analysis, and display of spatially referenced data, with the powerful display media underpinning the growth of visualisation strategies. It is now possible to do large-scale modelling by integrating datasets collected on different spatial templates.

SAQ 2

What are the main characteristics of geography as spatial science?

6.4 PROCESSES IN SPACE AND PLACE

Space and place are two of the most contested concepts in geography. Both concepts have been subject to varied definitions and interpretations. However, their precise meaning is crucial from the point of view of understanding the operation of spatial processes that shape the structure of space and characteristics of specific places. Broadly speaking, geographers define space as the earth's surface and place as part of it. Space refers to the separation (spacing) between entities and is an open area. Place, on the other hand, is understood as a part of space and gets its identity through its constitutive and circumstantial elements, such as memories, events, actions etc. Space is an emptiness that exists in every place and is not a condition related to events or memories. Along with its geographic meaning as "a portion of space in which people dwell together" and "locality," place is also a "rank" in a list (as "in the first place"), a temporal ordering (as in something "took place"), and a "position" in a social order (as in "knowing your place").

Space and places are enmeshed in myriad ways wherein a place becomes space and space, a place. Robert Sack (1997, p. 58) provides the essential thrust when he writes that his "framework draws on the geographical experiences of place, space, home, and world which people use in their lives to integrate forces, perspectives, and selves." From this point of view: place implies space, and each home is a place in space. Space is a property of the natural world, but it can be experienced. From the perspective of experience, place differs from space in terms of familiarity and time. A place requires human agency, is something that may take time to know, and a home especially so. As we move along the earth we pass from one place to another. But if we move quickly the places blur; we lose track of their qualities, and they may coalesce into the sense that we are moving through space (Sack, p. 16).

In this frame of reference, places are woven together through space by movement and the network ties that produce places as changing constellations of human commitments, capacities, and strategies. Places are invariably parts of spaces and spaces provide the resources and the frames of reference in which places are made. Though how free individual persons are in actuality to make and miss opportunities in place-making is far from clear.

The physical and socio-economic processes operate across space and in specific places. Further, both concepts are enmeshed in complex ways. Therefore, John Agnew (2011) has emphasised the need to examine the concept of space and place together while studying spatial processes. He is of the view that, "The question of space and place in geographical knowledge is ultimately not just about whether the question of "where" matters in the way that "when" does in explaining "how" and even "why" something happens. It is also, about how it matters. Given that both space and place are about the "where" of things and their relative invocation has usually signaled different understandings of what "where" means, it is best to examine them together rather than separately" (Agnew, p. 316)

As spatial science, geography is concerned with the study of patterns and processes on the earth's surface. The spatial pattern (of a distribution) is defined by the spatial arrangement of individual entities and the geographic relationships among them. The spatial distributions of houses in a village or villages in a region are examples of spatial distribution. The distribution of a particular spatial phenomenon, e.g. houses in villages of a region, can acquire different spatial patterns, such as random, uniform or clustered. However, geographic inquiry is not limited to mapping and describing the pattern of distribution of geographical phenomena. Instead, it also aims to discover forces that shape the spatial pattern of their distribution. For explaining the causes of the distribution of a particular spatial phenomenon, geographers try to relate it to the underlying processes. They define a process as a sequence of change systematically related to a chain of cause and effect (Martin & James, 1954). Accordingly, spatial process refers to the sequence of change systematically related to a chain of cause and effect giving rise to a particular kind of spatial distribution. A geographical pattern that can be observed at any one point of time results from the operation of these sequences of change. For example, they not only map the spatial distribution of population, which describes how spread out a population is (as in what area it occurs in), but also try to explain how the pattern of distribution of population on the earth's surface is shaped by physical factors, economic and political factors, differential rates of birth, death and migration over time. In other words, geographers deal with how, for example, the pattern of distribution of population in specific places changes and shifts over time.

Geographers deal with a large number of processes, such as physical, biotic, economic, political, social and cultural processes. It should be noted that the processes and patterns of interaction among them have uneven spatial distribution. Hence, the presence of similarities and differences between various parts of the earth's surface is due to complex patterns of interaction among the diverse spatial processes.

Geography is also concerned with describing the distinct characteristics of places on the earth's surface. Places are characterised by different physical and human characteristics. However, geographical inquiry is not limited to describing the characteristics of places. Instead, geographers try to understand the forces, operating both within those places and beyond, that shape the characteristics of places. For example, in the contemporary era of globalisation, a city acquires its morphological and socio-economic characteristics due to forces operating within its boundary as well as forces operating from beyond its boundary. The task before geographers is to identify diverse forces and trace the mechanism through which those forces give character to space and places.

SAQ 3

What are the processes in space and place?

6.5 TERRITORIALITY

Broadly, the term territory refers to a specific geographical area. However, it is a complex term with multiple interpretations. It is true that a piece of land is the starting point for developing an understanding of the concept of territory and territoriality. However, these concepts are much more than simply a piece of geographical area. The concept of territory is human-centric and it is used to describe human relationships with space. It refers to love, control or ownership of a piece of land by the people. More specifically, a piece of land which has well-defined ownership or control of either a state (under its jurisdiction) or a community (under its control) and that ownership or control has got legal or social sanctions. The ownership or identity of a territory may be contested. The interests of states and communities are deeply attached to their territories. Territories are also the source of identity of a state or community. Therefore, states defend their territory during wars. Communities also defend their territories against a takeover by the state or other communities.

The concept of territoriality is intimately linked to human behaviour, at the individual or community level. Merriam-Webster dictionary defines territoriality in two senses: (1) persistent attachment to a specific territory, and (2) the pattern of behaviour associated with the defence of a territory. Territoriality also refers to the domination and takeover of space by an individual or group. While territories have been defined variously as any defended space, areas of site-specific dominance, or sites of exclusive monopolisation of space, they can be quite fluid and short-term. Robert D. Sack (1986) considers territoriality as a means of affecting (enhancing or impeding) interaction and extends the particulars of action by contact. He further defines territoriality as an attempt to affect, influence, or control actions, interactions, or access by asserting and attempting to enforce control over a specific geographic area.

Robert D. Sack (1983, pp. 55-56) provides the following traits of the concept of territoriality:

- The most common definition is the defence of the area. The individual is expected to be in the area he/she is to defend. Defending area is presented as a goal in itself or as a means to such specific ends as control of population density, control of food resources, or assertion of dominance.
- Territoriality is an extension of action by contact. It is a strategy to establish differential access to people, things, and relationships. Its alternative is always non-territorial action.
- Geographic areas can refer to either fixed or portable areas, and an actor does not have to be in the territory to assert control over it.
- Territoriality is built on or embedded in non-territoriality. Non-territoriality is required to back up territoriality.
- Territoriality is not simply the circumscription of things in space. It is not equal to a region or area or territory in the old sense. It is circumscription with the intent to influence, affect, or control. A geographer's denoted

region, e.g., the Corn Belt, is not a territory in our sense of the word, nor is the nodal region of central place theory. Neither case uses an assertion of control with the implication of sanctions for transgressions.

- There are degrees of territorialisation. A maximum-security prison is more territorial than a halfway house, and a closed classroom is more territorial than an open one.
- There are numerous ways in which territoriality can be asserted, including legal rights to property in land and cultural norms and prohibitions about the usage of areas.
- Territoriality occurs at all scales, from the room to the nation-state. Territoriality is not an object but a relationship. A room may be a territory at one time and not at another.
- Territories most often occur hierarchically and are part of complex hierarchical organisations.
- Considering territoriality as a strategy for differential access avoids the issue of whether territoriality is an instinct.
- This definition cuts across prospects and levels of analysis. It involves the perspectives of those controlled and those doing the controlling, whether they be groups or individuals.

The above theorisation of territoriality by Sack has fundamentally altered the way geographers look at the way humans organise the earth's surface, attach meaning and significance to specific pieces of land; and what human beings can all do to defend their land. Territories are sites of human identity, social conflicts as well as cooperation. Territories are sites of mobilisation of people. The concept of territory tells us about how people's relationship with geographical space has evolved and fashioned in a variety of ways in different parts of the world.

SAQ 4

Describe the salient traits of territoriality.

6.6 GLOBALISATION AND SPATIAL INTERDEPENDENCE

Globalisation is a buzzword in the contemporary discourse of almost every discipline. As a process, at the heart of globalisation is space. Globalisation is a spatial process because it stands for the linkages between various parts of the earth. In geography, globalisation is defined as the set of processes (economic, social, cultural, technological, institutional) that contribute to the relationship between societies and individuals around the world. It is a progressive process by which exchanges and flows between different parts of the world are intensified. According to John Baylis, Steven Smith and Patricia Owens (2011), in contemporary times, globalisation is evident in the following principal sectors of social and spatial interaction:

- **Economic:** It is the process of growing integration of different economies of the world. It is made possible by the development of trade systems within transnational actors such as corporations or non-governmental organisations. Understanding the integration of local, regional, and national economies with the global economy is critical to knowing how people interact. People who ask how diverse people earn a living and how people are connected through trades and services apply an economic perspective.
- **Financial:** It refers to the financially connected world. Financial globalisation can be linked to the rise of a global financial system with international financial and monetary exchanges. Stock markets, for instance, are a great example of the financially connected global world since when one stock market has a rise or fall; it not only positively or negatively affects other markets but also the world economy as a whole.
- **Cultural:** It refers diffusion and spread of different cultural traits. It also signifies the inter-penetration of cultures that, consequently, means nations adopt principles, beliefs, and costumes of other nations, losing their unique culture to a unique, globalised supra-culture.
- **Political:** The development and growing influence of international organisations such as the United Nations or World Health Organisation, means governmental action takes place at an international level. There are international NGOs operating at a global level such as *Doctors without Borders* or *Khalsa Aid*. *Khalsa Aid* provides humanitarian aid in disaster areas and conflict zones around the world.
- **Legal:** There are transnational and international laws that govern the process of globalisation. For this, many world legal institutions have been created such as International Criminal Court to deal with crime against humanity.
- **Social:** Information moves almost in real-time, together with the interconnection and interdependence of events and their consequences. People move all the time too, mixing and integrating different societies.
- **Technological:** It is a phenomenon by which millions of people are inter-connected due to the power of the digital world via the internet and social media platforms such as Facebook, Instagram, Skype or Youtube.
- **Geographical:** It is the organisation and hierarchy of different regions of the world that is constantly changing. Moreover, with transportation and flying made so easy and affordable, apart from a few countries with demanding visas, it is possible to travel the world without or with barely any restrictions.
- **Ecological:** It refers to the idea of considering Planet Earth as a single global entity – a common good all societies should protect since the weather affects everyone and we are all protected by the same earth's atmosphere. In this regard, it is often said that the poorest countries that have been polluting the least will suffer the most from climate change.

Globalisation has benefits that cover many different areas. It reciprocally developed economies all over the world and increased cultural exchanges. It also allowed financial exchanges between companies changing the paradigm

of work. Many people are nowadays citizens of the world. The origin of goods became secondary and geographic distance is no longer a barrier for many services to happen.

The key to globalisation is the growing dependence between regions and countries of the world. In order to understand the concept of interdependence in the geographical sense, we need to first define the concept of spatial interaction. The term spatial interaction was used by E. W. Ullman (1954) to indicate interdependence between geographic areas. He used this interdependence as complementary to the society-environment interdependence within a single area. For him, it should be a major focus of geographic inquiry. The term spatial interaction includes the movement of goods, passengers, migrants, money, information, ideas, etc., between and among geographic areas. The concept is similar to the concept of 'the geography of circulation', which was popular in French Geography in the first half of the twentieth century. Ullman defined three bases of spatial interaction in terms of commodity flow between two regions. These are complementarity, transferability and intervening opportunities.

The contemporary world is characterised by the interdependence of world regions. Interdependence and international cooperation among countries of the contemporary world are inherent. Previously isolated economies are incorporated into the global economy through the transition from subsistence to commercial activities. Economic transformations promote an increasing interdependence among all societies and cultures on the earth. Technological changes in transportation and communication accelerate and expand economic exchange between the peoples of the world. Local economies may be drastically altered by decisions made in distant places. Local events can also have global repercussions. For example, economic decline in one country can influence all those countries with which it has economic relations.

SAQ 5

In which principal sectors of social and spatial interaction, globalisation is evident?

6.7 GENDER, SPACE AND PLACE

Gender refers to the social construction of male and female, and other embodied sexualities (to step away from the binary of genital based male and female sexes) representing behaviour, attitudes and opportunities as well as relations between and among them. Conventionally, society attaches certain values and customs to male and female bodies, such as what clothes they should wear, which place they should visit, etc. There are also sets of social norms and rules that prescribe how a male ought to relate to a female and a female ought to relate to a male. For example, in a patriarchal society, women symbolise a body that must be preserved, guarded, protected and respected. This body has the capability to give birth and therefore, the female body acts as a centre in which gendered space is enacted. For example, to preserve and protect women in society, they should be confined to places, which are

'safe' and 'secured', i.e. home. To prevent violence against women, safe spaces have been established in many Indian cities. One prominent example is the implementation of women's coaches and seats in the Delhi and Mumbai Metros. In the buses, separate seats are reserved for females and there are separate ladies' compartments in trains.

All kinds of social relations, including gender relations, are shaped by unequal power relationships between social actors. Power is the ability to influence the behaviour of others. The relationship between men and women is also mediated by unequal distribution of power. Generally, in men-women relationships, it is the men who tend to dominate. However, the pattern of domination varies from society to society. In patriarchal societies, domination is near absolute. In liberal societies, women enjoy more equality in men-women relationships. In some societies, women have greater rights.

Gender relations take place within places and across space. At the same time, gender relations shape the character of places and the structure of space. Therefore, many geographers view that the social and the spatial are inseparable. In fact, both are causally related. The relationship can be seen in two ways. First, gender relations and gender related practices create space. Second, the structure of space (spatial form) affects the ways gendered roles and relationships are carried in society.

Men and women perform their roles in specific places. The relationship between men and women also takes place in specific places and the character of place shapes gender roles and relationships. For example, men and women are found to use important landmarks/public spaces (such as roads, shopping complexes, parks, etc.) in a city differently at different times of the day. Similarly, an apartment building differs from a traditional house from a gender viewpoint. Thus, it is because of the differential roles performed by men and women in specific places and variations in their relationship with those places that make those places gendered. This way, gender relations and gender related practices create space. One can also say that places are deliberately organised by society in such a way as to enable differential role performances by men and women.

The idea is once a place is organised in particular ways, it starts shaping gender relations and practices. Therefore, the other side of the story in these relationships becomes relevant. The structure of space and the character of places also shape gender relations. The structure of space shapes the pattern of relationships between men and women. The role of distance is an important factor in the differential use of facilities by men and women. Similarly, where women and men from a neighbourhood go for recreational activities, such as watching films in a multiplex, also depends besides many other factors, on geographical distance.

How and why does society reproduce gender in space? Space is organised in specific ways by society to maintain, preserve and socially reproduce inequality between men and women in different forms.

How spaces and places are gendered? The gendering of spaces is a means by which a society maintains (unequal) relations between men and women. A gendered space not only can maintain the existing pattern of relationships

between men and women but also strengthen specific ways of being a man or being a woman. One very common form of gendered spaces is referred to as the public-private divide. The distinction between public and private ensures certain activities and spaces as male preserves. When females and males are separated in places where they live, learn, and work, females' status becomes lower than males' because they have less access to knowledge and power. Gendered spaces often enable the dominant gender (usually the male) to retain control of scarce resources. The traditional view in traditional religious societies is that private space belongs to women, while public space belongs to men. They remain at home and care for the family's own affairs. Generally, females' status is lowest in societies with highly differentiated public and private spheres. The gendering of spaces helps to reinforce prevailing gender-specific cultural norms in the society. To be precise, specific spaces have specific gender codes. People should avoid being in the 'wrong' places based on gender designation and safety. For example, women are often advised to avoid visiting certain places at night. Such places are considered unsafe for them. People in 'wrong place' can also be punished according to prevailing social norms and rules. For example, the metro police may impose fine if a man enters a compartment of a metro train reserved for women.

SAQ 6

How spaces and places are gendered?

6.8 MODERN AND POST-MODERN GEOGRAPHY – A CONCLUDING DISCOURSE

Geography has undergone profound changes since the Second World War. The period witnessed the rejection of descriptive regional geography with a focus on explanatory theory building of positivism. It came to be known as modern geography. Its aim was to explain patterns and processes on the earth surface by using methods and logic of natural sciences. It focuses on grand generalisation, theory and model buildings for mapping and explaining patterns and processes on the earth's surface. In modern geography, the absolute and relative conceptions of space are crucial to understand the world.

Postmodernism developed in the 1960s in the fields of art, literature and architecture. The concept is difficult to define. According to Michael J. Dear (1984), the term postmodernism has been used in three senses- as style, as method and as an epoch. As a style, postmodernism refers to an architectural departure from modern style. Advocates of postmodernism argue that in many cities traditional designs of every era have started appearing. As a method, postmodernism emphasises on deconstruction. It questions the undisputed meta-narratives of modernism and rejects its authority. It celebrates the multiple discourses including the 'discourse of others'. As an epoch, postmodernism claims to represent an epochal

transition – as some kind of radical break with the past. According to Jameson (1985), postmodernism is a periodising concept whose function is to correlate the emergence of new formal features in culture with the emergence of a new type of social life and a new economic order. In a nutshell, the departure from modernism to postmodernism can be understood through the following points:

- Theories developed in modern geography are based on the relative of conception of space. In postmodern geography, the centrality is accorded to the relational notion of space for interpreting the earth as the home of human beings.
- Unlike modernism, which emphasises the generalisation and development of theories and laws to provide a simplified understanding of the complexities of human society, postmodernism focuses on heterogeneity and diversities.
- Modern geography gives emphasis on objectivity and spatial order. Postmodern geography emphasises subjectivity and does not look for any pattern or order in the way things are organised on the earth's surface. It rejects meta-narratives (grand statements) or historical causation about the structure and function of the society
- While modern geography focuses on the universality and singularity of knowledge, postmodern geography insists on its particularity of places and their plurality.
- While modern geography focuses on rationality for explaining spatial patterns, postmodern geography questions the principle of rationality in structuring the space.
- Modern geography focuses on a singular perspective. Postmodern geography considers that everything that human beings perceive, express, and interpret on the earth surface is influenced by their class, caste, gender, nationality and culture and therefore no one interpretation is superior.

The impact of the postmodern movement was also strongly felt in Human Geography. In particular, postmodernism emerged as a distinct theoretical approach to Human Geography during the 1980s. Geography focuses on describing and interpreting different parts of the earth, which are not only organised distinctively but also possess their own unique expressions. This fact of geography found instant resonance with postmodernism. Geographical ways of looking at the earth and interpreting it as the home of human beings from diverse perspectives were found to be very close to the postmodern approach.

In geography, the publication of two books during the 1980s marks the beginning of the debate. First was the *Postmodern Geographies* by Edward Soja. His work is highly influenced by the work of Henri Lefebvre and Michel Foucault. Space has been highly neglected in social science theories. Social theories have been developed with the assumption that social processes operate on the needle of a pin or on space, which is uniform in all respects. In other words, space does not matter in the operation of social

processes and hence social science theories were developed without considering spatial factors. Edward Soja considered that postmodernism led to the assertion of space in social theories. Soja gives examples of reassertion of space in the works of Jean-Paul Sartre, Arthur Asa Berger, Michel Foucault, Jean Francois Lyotard, and Henri Lefebvre. The second work of eminence in the same year was David Harvey's *The Condition of Postmodernity*. In this book, Harvey presented a powerful critique of postmodernism. He provided a scathing analysis of the new global regime of flexible accumulation and postmodern culture dictated by the market. Harvey's critique of postmodernism is unique. He interprets the contemporary historical phase within a broader periodisation of capitalism, characterised by ever-increasing time-space compression due to advancements in transportation and communication technologies.

SAQ 7

Define postmodernism and postmodern geography.

6.9 SUMMARY

Space has always been the key concept of geography. The discipline of geography experienced many upheavals in its philosophy and methodology. These philosophical and methodological shifts were made possible largely because of the increasing theoretical sophistication of space. The conceptual revolution in geography started with the positivist movement. It called for the rejection of geographical description highlighting the uniqueness, individuality and particularities of places and regions. Instead, it emphasised the application of statistical and mathematical techniques to map and measure order and regularity in the spacing of phenomena in geographical space. In the late nineteen eighties, postmodernism gained prominence in geography against this tradition of geographic generalisation. Postmodernism focused on the specificity and plurality of geographical spaces and their meanings. Correspondingly, the concept of space also underwent several rounds of theorisation. Regional geography was based on the absolute notion of space. In positivist geography, the relative notion of space became the central point of theory building and law making concerning the spatial organisation of society. On the other hand, the postmodern geographical interpretations of the Earth made use of a relational view of space.

In a nutshell, in this unit, you have studied:

- meaning and types of space (Absolute, Relative and Relational);
- geography as spatial science;
- processes in space and place;
- territoriality;
- globalisation and spatial interdependence;
- gender, space and place; and
- Modern and Post-modern Geography as concluding discourse.

6.10 TERMINAL QUESTIONS

1. "Space is neither absolute, relative nor relational in itself, but it can become one or all simultaneously depending on the circumstances." Explain the above statement.
2. Explain geography as a science of place and space. What are the main premises of geography as spatial science?
3. Explain how spatial processes create varied patterns in geographical space. Discuss how spatial processes are more important than spatial patterns.
4. What are the characteristics and traits of the concept of territoriality?
5. Discuss various elements of globalisation and spatial interdependence.
6. How society reproduces gender in space? Discuss with examples how the functional and morphological characteristics of a city reflect unequal gender roles and relations.
7. Discuss the postmodern critique of modern geography. What are the main arguments of postmodernism against modern geography?

6.11 ANSWERS

Self-Assessment Questions (SAQ)

1. Absolute space is a fixed physical space and timeless bounded by a series of coordinates (latitude-longitude). The relative space is not fixed and is dynamic, which changes with time with the development of technology mainly associated with the theories of Albert Einstein and the non-Euclidean geometries, where the position of objects in relation to each other matters more than their actual position. Relational space is the production of space produced by the multiplicity of processes creating various spatial realities.
2. The main characteristics of geography as spatial science are positivist in orientation; shift from ideographic to nomothetic, application of statistical and mathematical techniques to measure regularity and order in the spatial location and distribution of phenomena, focus on the study of the earth as spatial system, formulation and testing of spatial hypotheses, drawing generalisations regarding empirical regularities in spatial organisation, spatial analysis using shapes (point, line and polygons (nodes/intersections, connections and areas) as the earth's feature with flow and patterns, development of spatial models and predictions and applications of geospatial techniques in the geographical studies.
3. Processes in space and place are spatial, physical, biotic, economic, political, social and cultural.
4. The salient traits of territoriality are defence of area or an individual is expected to be in the area he/she is to defend as a goal in itself or as a means to such specific ends; extension of action by contact or its alternative is always non-territorial action; in this, the geographic area can refer to either fixed or portable areas, and an actor does not have to be in

the territory to assert control over it; requirement of non-territoriality to back up territoriality; territoriality is not simply the circumscription of things in space; inclusion of degrees in territorialisation; assessment of territoriality in numerous ways; it occurs at all scales, often occurs hierarchically and are part of complex hierarchical organisations; and its definition cuts across prospective and levels of analysis.

5. Globalisation is evident in the following principal sectors of social and spatial interaction: economic, financial, cultural, political, legal, social, technological, geographical and ecological.
6. The gendering of spaces is a means by which a society maintains (unequal) relations between men and women and also strengthens specific ways of being a man or being a woman by reinforcing specific cultural norms in the society and defining specific gender codes. The traditional view in traditional religious societies is that private space belongs to women remaining at home and taking care of the family's affairs, while public space belongs to men.
7. Postmodernism is an approach to looking at phenomena beyond modernism (basically capitalism) rejecting the grand narratives. Postmodern geography is a geography where the centrality is the relational notion of space for interpreting Earth as the home of human beings. It rejects meta-narratives (grand statements) or historical causation about the structure and function of the society. It emphasises the generalisation and development of theories and laws to provide a simplified understanding of the complexities of human society focusing on heterogeneity and diversities with subjectivity.

Terminal Questions

1. Explain the given statement “space is neither absolute, relative or relational in itself, but it can become one or all simultaneously depending on the circumstances” in detail. Refer to Section 6.2.
2. Logically discuss geography as a science of place and space and the main premises of geography as spatial science. Refer to Sections 6.3 and 6.4.
3. Explain spatial processes creating varied patterns in geographical space and discuss more importance of spatial processes over spatial patterns. Refer to Section 6.4.
4. Discuss the characteristics and traits of the concept of territoriality. Refer to Section 6.5.
5. Discuss various elements of globalisation including spatial interdependence. Refer to Section 6.6.
6. Explain how society reproduces gender in space and how the functional and morphological characteristics of a city reflect unequal gender roles and relations citing suitable examples. Refer to Section 6.7.
7. Discuss the postmodern critique of modern geography with major arguments of postmodernism against modern geography. Refer to Section 6.8.

6.12 REFERENCES AND FURTHER READING

1. Baylis, J., Smith, S. and Owens, P. (2011): *The Globalization of World Politics: An Introduction to International Relations*, New York: Oxford University Press.
2. Couclelis, Helen (1992): "Location, Place, Region and Space" in Abler, Ronald F., Marcus, Melvin G. and Olson, Judy M. (ed.): *Geography's Inner World: Pervasive Themes in Contemporary American Geography*, New Jersey: Rutgers University Press, New Brunswick, pp. 210-223.
3. Harvey, David (1994): *Social Justice and the City*, Oxford: Basil Blackwell.
4. Harvey, David (1994): "The Social Construction of Space and Time: A Relational Theory", *Geographical Review of Japan*, Vol. 67 (Series B), No. 2, pp. 126-135.
5. Harvey, David (2004): "Space as a Keyword", *Paper for Marx and Philosophy Conference*, 29 May 2004, London: Institute of Education, London, at harvey2004.doc (frontdeskapparatus.com); Accessed on May 20, 2022.
6. Knox, P.L. and Marston, S.A. (2007): *Places and Regions in Global Context: Human Geography*, Upper Saddle River: Prentice Hall.
7. Sack, Robert D. (1983): "Human Territoriality: A Theory", *Annals of the Association of American Geographers*, Vol. 73, No.1, pp. 55-74.
8. Sack, Robert D. (1986): *Human Territoriality: Its Theory and History*, Cambridge: Cambridge University Press.
9. Ullman, E.L. (1980): *Geography as spatial interaction*, Seattle: University of Washington Press.
10. Adhikari, S. (2015): *Fundamentals of Geographical Thought*, New Delhi: Orient Blackswan.
11. Boyl, M. (2015): *Human Geography: A Concise Introduction*, Chichester: Wiley Blackwell.
12. Dikshit, R. D. (2004): *Geographical Thought. A Critical History of Ideas*, New Delhi: Prentice-Hall of India. (English).
13. Gregory, D., Johnston, R., Pratt, G., Watts, M.J. and S. Whatmore (2009): *Dictionary of Human Geography*, Sussex: Willey-Blackwell.
14. Holt-Jensen, A. (2009): *Geography: History and Concepts: A Student's Guide*, London: Sage.
15. Hammond, C.W. (1979): *Elements of Human Geography*, London: Unwin Hyman.
16. Hussain, M. (2007). *Evolution of Geographical Thought*, New Delhi: Rawat Publications.
17. Rana, L. (2008). *Geographical Thought: A Systematic Record of Evolution*, New Delhi: Concept Publishing House.
18. James, Preston E. & Jones, Clarence F. (1954): *American Geography: Inventory and Prospect*, New York: Syracuse University Press.
19. Agnew, J. (2011): "Space and Place" in Agnew, J.A. and D.N. Livingstone (eds.): *The Sage Handbook of Geographical Knowledge*, New Delhi: Sage.

GLOSSARY

Cultural Landscapes	: Landscape is an objective area, which can be studied scientifically through observation and experiments. Cultural landscapes are those landscapes which include cultural features or human creations over the natural landscape.
Deductive Nomological Methods	: An approach to scientific studies, where empirical observation is made starting from general going to a search for particular truth, which is not just explanation and description but draws law-like statements.
Empirical Fact	: Facts based on empirical observation.
Empiricism	: A belief in the theory of knowledge suggesting that experience derived from the senses is the basis of all knowledge.
Euclidean Geometry	: Also known as plane geometry, it is the measurement of shapes and figures on flat or plane surfaces.
Feminine	: Possessing qualities or an appearance conventionally associated with women.
Formal Region	: Formal Region is an areal entity an end in itself and can be identified and mapped objectively. Examples are physiographic regions, vegetation, soil and climatic regions, cultural regions, linguistic regions, etc. This kind of region is also known as an objective region demarcated on the bases of facts independent of human efforts.
Functional Region	: A Functional Region is an area delineated around a certain focal point especially related to a specific function or service. It is created based on certain objectives and purposes. It gets modified with modifications in culture, economy and spatial interaction. Further, the boundaries of these regions are quantitatively defined and have movement, network, nodes, hierarchy and surface and diffusion as elements. Examples are the region of daily commuters to a certain node or town/city, the region of vegetable and milk supply to the node, newspaper supply from the node to the surroundings, etc.
Gendered	: Reflecting or involving gender differences or stereotypical gender roles.
Generalisation	: A form of abstraction whereby common properties of specific instances are formulated as general statements or concepts.
Landscape Chronology	: Explanation of the evolution of landscape through reconstruction of past situations as it travels a long way to get shaped and reshaped with the advancements of factors and processes. Landscape chronology is the history of landscape and its study.

Landscape	: According to Carl O. Sauer, landscape is an objective area, which can be studied scientifically through observation and experiments.
Masculine	: Possessing qualities or an appearance conventionally associated with men.
Natural Landscapes	: A landscape is an objective area, which can be studied scientifically through observation and experiments (according to Carl O. Sauer). Natural landscapes are those landscapes which include the landforms like mountains, hills, plateaus, plains, coasts, deserts, water bodies, soils, vegetation, etc.
Positivism	: A belief that knowledge about society can be profitably obtained by using methods of natural sciences. In geography, positivism is the usage of rigorous scientific methods.
Quantitative Revolution	: A paradigm shift in geography during the 1950s, especially in 1960s, that sought to develop a more rigorous and systematic methodology for the discipline by applying statistical and mathematical techniques. This period is marked with the usage of extensive statistical and mathematical tools in geographical studies.
Region	: A region is the basis of geographical studies, which is a piece of land with homogeneity in one or a combination of physical or cultural criteria.
Sexuality	: Sexual orientation, i.e. a person's identity in relation to the gender or genders to which they are typically attracted.
Spatial Interaction	: It is an inter-relationship between places or regions with the movement of people, goods and ideas between geographical areas.
Spatial	: It is a term pertaining to space or the earth's surface.
Spatiality	: The way social relations are inscribed in space or human or social implications of space.
Topology	: The study of geometrical properties and spatial relations of shape or size of figures (such as points, lines and area) that are unaffected by elastic deformations (such as stretching or twisting). The spatial relationship among various features (points, lines and polygons) is called topology, which is the most important property of any spatial database in Geographical Information System.

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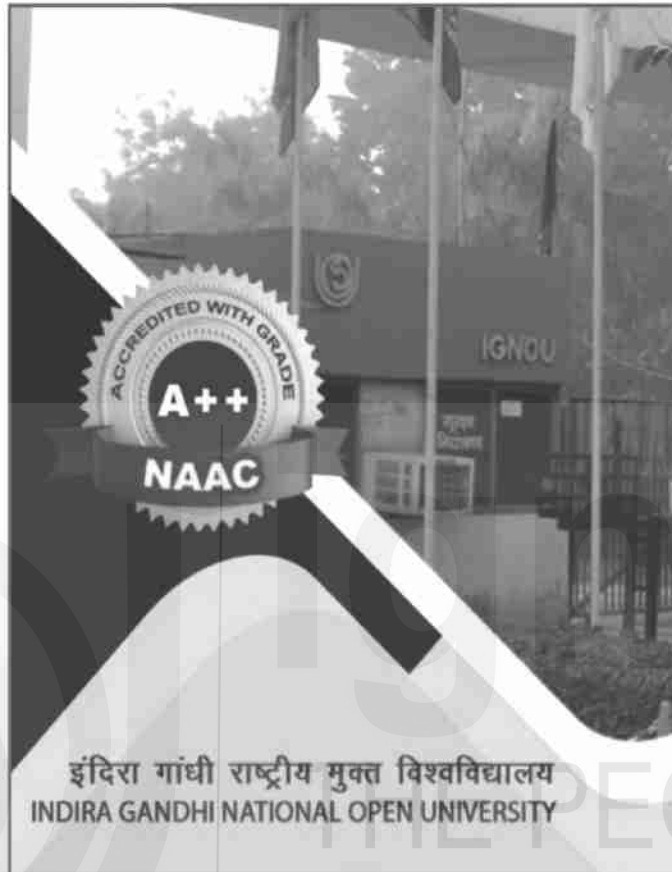
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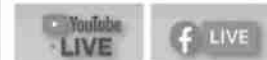
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