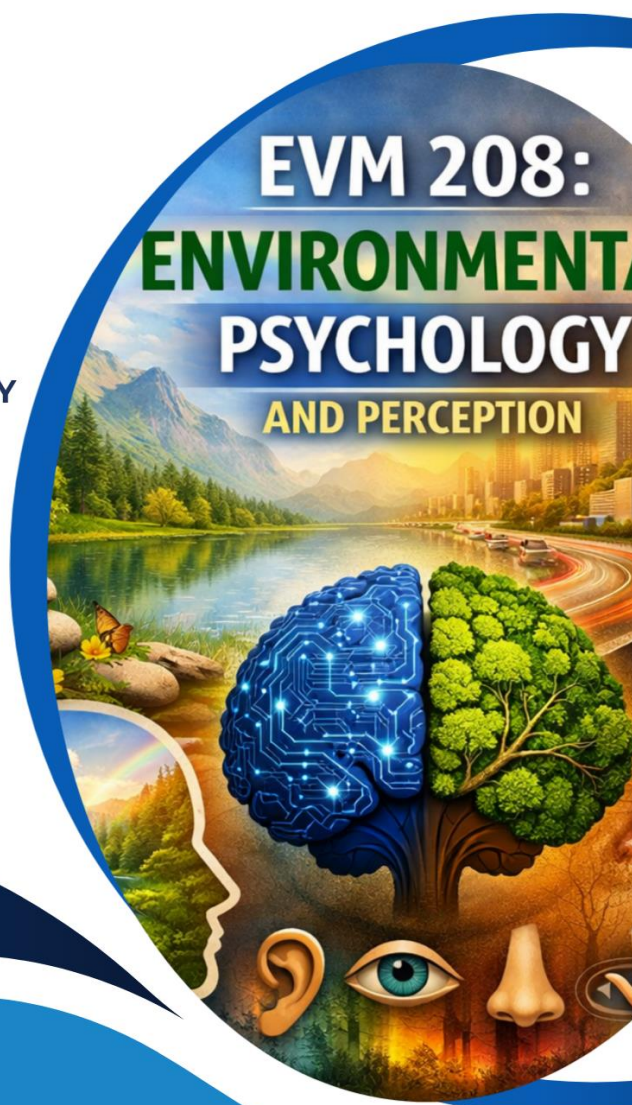


EVM 208

ENVIRONMENTAL PSYCHOLOGY
AND
PERCEPTION

2 UNITS



Course video is available on our app

lanetonline.com



Series 1

Course code: EVM 208

Course title: Environmental Psychology and Perception

Course credit load: 2 Units

List of Series:

- **Series 1: Scope and Concepts of Environmental Psychology**
- Series 2: Perception, Cognition and Environmental Images
- Series 3: Stress, Behaviour and Social Interaction in the Environment
- Series 4: Environmental Perception, Human Behaviour and Assessment Techniques
- Series 5: Quality of Environment, Preferences and Decision Making

Series Outline for Series 1: Scope and Concepts of Environmental Psychology

- **Part 1 (1.1): Scope and Objectives of Environmental Psychology**
 - Sub-Part 1.1.1: Definition and scope of environmental psychology
 - Sub-Part 1.1.2: Objectives and relevance of environmental psychology
- **Part 2 (1.2): Basic Environmental Psychological Concepts**
 - Sub-Part 1.2.1: Key concepts: environment, behaviour, and perception
 - Sub-Part 1.2.2: Ecological psychology and its foundations
- **Part 3 (1.3): Human-Environment Interaction**
 - Sub-Part 1.3.1: How humans experience and respond to their environment
 - Sub-Part 1.3.2: Factors shaping human-environment relationships
- **Part 4 (1.4): Issues and Challenges in Environmental Psychology**
 - Sub-Part 1.4.1: Environmental problems and psychological well-being
 - Sub-Part 1.4.2: Contemporary challenges in the field



Introduction

Environmental psychology is concerned with how people experience, interpret, and respond to the physical settings in which they live. It recognises that the relationship between human beings and their surroundings is not one-directional but mutually influential: the environment shapes behaviour, emotions, and cognition, while human actions in turn transform the environment. Understanding these interactions is increasingly important as environmental challenges such as urbanisation, pollution, and resource depletion affect the psychological well-being of populations worldwide.

The aim of this Series is to introduce you to the scope, objectives, and foundational concepts of environmental psychology, examine the nature of human-environment interaction, and highlight the issues and challenges that the field addresses in the context of contemporary environmental problems.

We shall commence this Series by defining environmental psychology and examining its scope and objectives. Next, we will explore the basic concepts of the field, including key terms and the foundations of ecological psychology. We will then consider how humans experience and respond to their environment and the factors that shape these relationships. Finally, we will examine the issues facing environmental well-being and the contemporary challenges that the discipline seeks to address.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 1.1** define environmental psychology and describe its scope and objectives,
- **SLO 1.2** explain the basic concepts of environmental psychology, including ecological psychology,
- **SLO 1.3** describe how humans experience and respond to their physical environment,
- **SLO 1.4** identify the factors that shape human-environment relationships, and
- **SLO 1.5** assess the issues facing environmental psychological well-being and the contemporary challenges in the field.

1.1 Scope And Objectives Of Environmental Psychology

1.1.1 Definition and scope of environmental psychology

Environmental psychology is a branch of psychology that studies the relationship between people and the physical settings they inhabit. Its scope extends from the immediate physical surroundings of individuals, such as rooms and buildings, to broader natural and urban environments. The field seeks to understand how the environment influences human thought, emotion, and behaviour, and conversely, how human actions shape and modify environmental



conditions. As a discipline, environmental psychology draws on concepts from psychology, geography, architecture, and ecology to provide a comprehensive understanding of human-environment interactions.

Fill in the blank: Environmental psychology studies the relationship between people and the _____ settings they inhabit.

1.1.2 Objectives and relevance of environmental psychology

The objectives of environmental psychology include understanding how different physical environments affect mental health, stress, productivity, and social behaviour. It also aims to inform the design of built environments, promote pro-environmental behaviour, and contribute to policies that improve the quality of living and working spaces. The relevance of the field has grown considerably in recent decades as rapid urbanisation, overcrowding, pollution, and climate change have created new psychological pressures that individuals and communities must navigate in their everyday lives.

Fill in the blank: One objective of environmental psychology is to inform the design of _____ environments to improve human well-being.



Short description: A photograph of a person in a built urban environment such as a busy street or office building, illustrating the physical settings studied in environmental psychology.

Plate 1.1 A person navigating a built urban environment

Pilot questions 1.1

1. Which of the following best describes the focus of environmental psychology?



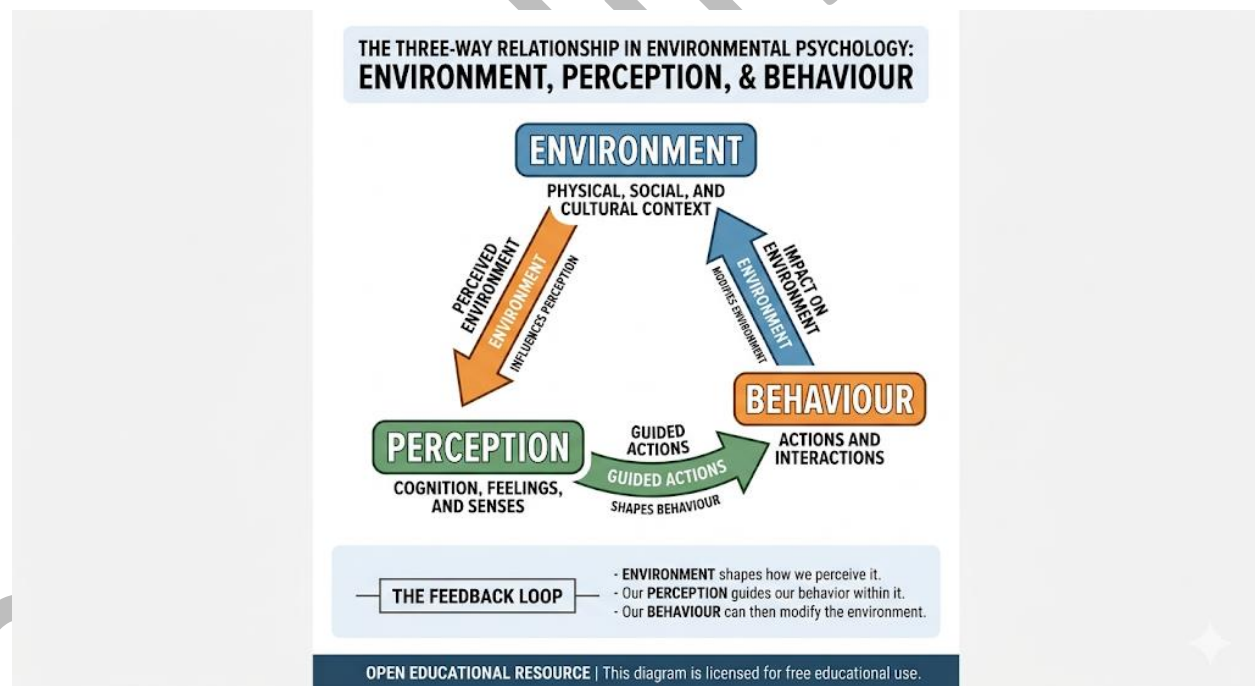
2. Which discipline does environmental psychology draw on alongside psychology?
3. What is one objective of environmental psychology?
4. Name two types of physical settings studied in environmental psychology.
5. Why has the relevance of environmental psychology increased in recent decades?

1.2 Basic Environmental Psychological Concepts

1.2.1 Key concepts: environment, behaviour, and perception

Three concepts are central to environmental psychology. **Environment** in this context refers to all the physical and social conditions that surround an individual, including natural settings, built structures, and sensory stimuli such as noise, light, and temperature. **Behaviour** encompasses the actions, reactions, and adaptations of individuals in response to environmental conditions. **Perception** refers to the process by which individuals interpret and make sense of sensory information from their surroundings, which is central to how people evaluate and respond to different environments.

Fill in the blank: The process by which individuals interpret sensory information from their surroundings is known as _____.



Short description: A diagram showing the three-way relationship between environment, behaviour, and perception in environmental psychology.

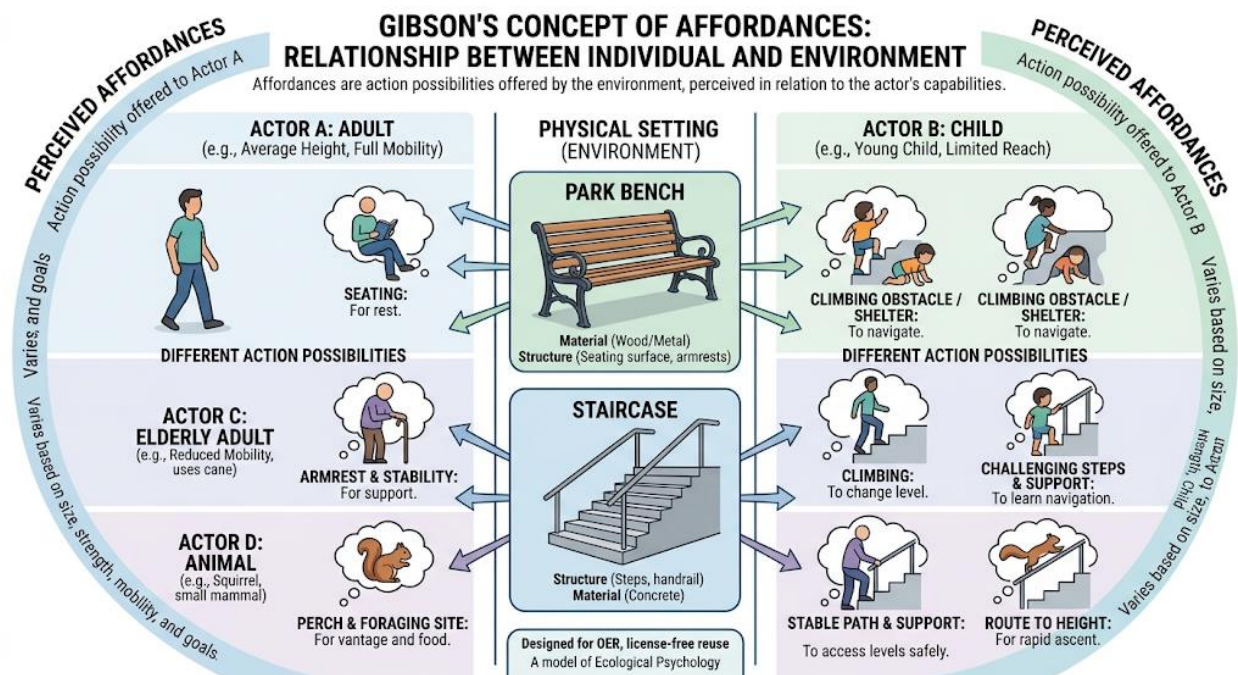
Plate 1.2 The relationship between environment, behaviour, and perception



1.2.2 Ecological psychology and its foundations

Ecological psychology is a branch of environmental psychology associated with the work of James Gibson, who proposed the concept of **affordances**, which refers to the action possibilities that the environment offers to an individual. According to this perspective, people do not simply observe their environment but actively perceive what it affords them in terms of possible actions. Ecological psychology emphasises the direct, functional relationship between an organism and its environment and provides a foundation for understanding how physical settings shape behaviour without the need for complex internal mental processes as intermediaries.

Fill in the blank: James Gibson's concept of _____ refers to the action possibilities that the environment offers to an individual.



Short description: A diagram illustrating James Gibson's concept of affordances, showing how a physical environment offers different action possibilities to an individual.

Figure 1.1 Gibson's concept of affordances in ecological psychology

Pilot questions 1.2

1. Which of the following best describes the concept of perception in environmental psychology?
2. Who introduced the concept of affordances in ecological psychology?
3. What does the term affordance mean in the context of ecological psychology?
4. Why is the concept of behaviour important in environmental psychology?
5. Give one example of how the physical environment influences human behaviour.



1.3 Human-Environment Interaction

1.3.1 How humans experience and respond to their environment

Humans experience their environment through the senses, forming impressions and evaluations that guide behaviour. These experiences are not purely sensory but are shaped by **cognition**, which involves the mental processing of environmental information, including memory, attention, and evaluation. People respond to environmental stimuli in a range of ways, from simple orientation responses to complex decisions about where to live, work, or spend leisure time.

Experience and **imagination** also play a role, as individuals draw on past encounters with environments and mental projections of future settings to make sense of and respond to their current surroundings.

Fill in the blank: The mental processing of environmental information, including memory, attention, and evaluation, is referred to as _____.

1.3.2 Factors shaping human-environment relationships

Several factors shape the relationship between humans and their environments. **Cultural background** influences how people perceive and value different settings, as meanings attached to places vary across societies. **Personal history** and past experience with environments shape current preferences and responses. **Physical characteristics** of the environment itself, such as noise levels, spatial layout, and aesthetic quality, also play a significant role. Together, these factors mean that human-environment relationships are not uniform but vary considerably among individuals and groups.

Fill in the blank: The meanings and values that individuals attach to specific places, which vary across societies, are shaped by _____ background



Short description: A photograph showing people from different cultural backgrounds interacting with the same outdoor space in different ways, illustrating how cultural background shapes human-environment relationships.

Plate 1.3 Cultural variation in how people relate to their environment

Pilot questions 1.3

1. What role does cognition play in how humans experience their environment?
2. How do experience and imagination influence responses to the environment?
3. Name three factors that shape the relationship between humans and their environments.
4. Give one example of how cultural background influences environmental perception.
5. Why do human-environment relationships vary among individuals and groups?

1.4 Issues And Challenges In Environmental Psychology

1.4.1 Environmental problems and psychological well-being

Environmental problems such as noise, overcrowding, pollution, and insanitary conditions have direct consequences for psychological well-being. **Stress** arising from environmental pressures can impair concentration, reduce productivity, and contribute to mental health problems such as anxiety and depression. Overcrowded living conditions reduce privacy and personal space, increasing interpersonal conflict. Pollution of air, water, and soil not only poses physical health risks but also causes psychological distress, particularly in communities that are aware of environmental contamination but feel unable to address it. These connections between environmental quality and psychological health are a central concern of environmental psychology.

Fill in the blank: Environmental pressures such as noise and overcrowding can cause psychological _____, which impairs concentration and reduces productivity.

1.4.2 Contemporary challenges in the field

Environmental psychology faces a number of **contemporary challenges**. The rapid growth of urban areas creates densely populated environments with limited access to green space, increasing demands for research on how urban design affects mental health and social behaviour. Climate change introduces new psychological stressors, including anxiety about environmental futures and the trauma experienced by communities displaced by extreme weather events. There is also a growing need for the field to engage with questions of environmental justice, examining how environmental burdens and benefits are distributed across different social groups.



Fill in the blank: The anxiety and distress associated with awareness of environmental threats and climate futures is a growing concern in contemporary environmental _____.

Environmental Stressor	Main Psychological & Behavioral Effects
Noise	Leads to elevated cortisol levels , sleep disturbance, and cognitive impairment. Chronic noise is linked to increased irritability and a significant drop in concentration and task performance.
Overcrowding	Creates a sense of "behavioral sink," leading to social withdrawal , heightened aggression, and anxiety. It often results from a perceived lack of control over one's personal space.
Pollution	Beyond physical health, air and light pollution are tied to fatigue, depressive symptoms, and "eco-anxiety." Poor air quality specifically has been shown to reduce neural efficiency and overall productivity.

Box 1.2 Key environmental stressors and their psychological effects

Short description: Text box listing environmental stressors such as noise, overcrowding, and pollution alongside their main psychological effects.

Pilot questions 1.4

1. Name two environmental problems that affect psychological well-being.
2. What psychological effects can arise from living in overcrowded conditions?
3. What is one contemporary challenge facing environmental psychology?
4. How does limited access to green space in urban areas affect mental health?
5. Why is environmental justice considered an important concern for environmental psychology?

Series Summary

This Series has introduced you to the scope and foundational concepts of environmental psychology. We began by defining the discipline and examining its objectives and relevance in the context of contemporary environmental challenges. We then explored the key concepts of



environment, behaviour, and perception, and considered the foundations of ecological psychology through Gibson's concept of affordances. Following that, we examined how humans experience and respond to their environments, and the cultural, personal, and physical factors that shape these relationships. Finally, we considered how environmental problems affect psychological well-being and identified the contemporary challenges facing the field.

By working through this Series, you should now be able to define environmental psychology and describe its scope and objectives, explain key concepts including ecological psychology and affordances, describe how humans experience and respond to their physical environment, identify the factors shaping human-environment relationships, and assess the issues and contemporary challenges in the field. These abilities align with the Series Learning Outcomes (SLOs) and provide a strong foundation for the more specialised topics covered in subsequent series of this course.

Glossary of Terms

- **Affordances:** The action possibilities that the physical environment offers to an individual, as proposed by James Gibson in ecological psychology.
- **Behaviour:** The actions, reactions, and adaptations of individuals in response to environmental conditions and stimuli.
- **Cognition:** The mental processes by which individuals interpret, store, and evaluate information from their environment, including memory, attention, and reasoning.
- **Ecological psychology:** A branch of environmental psychology, associated with James Gibson, that emphasises the direct relationship between organisms and their environments through the concept of affordances.
- **Environment:** All the physical and social conditions surrounding an individual, including natural settings, built structures, and sensory stimuli such as noise, light, and temperature.
- **Environmental justice:** The fair distribution of environmental burdens and benefits across different social groups, and a growing area of concern within environmental psychology.
- **Environmental psychology:** A branch of psychology that studies the relationship between people and the physical settings they inhabit, examining how environments influence thought, emotion, and behaviour.
- **Environmental stress:** Psychological strain arising from environmental pressures such as noise, overcrowding, and pollution, which can impair concentration, productivity, and mental health.
- **Perception:** The process by which individuals interpret and make sense of sensory information from their surroundings, central to how environments are evaluated and responded to.



- **Personal history:** An individual's past experiences with environments, which shape current preferences, evaluations, and responses to physical settings.

Concept Check Questions 1

Objective Questions

1. Define environmental psychology and state its main concern. (Linked to SLO 1.1)
2. Identify the three key concepts central to environmental psychology. (Linked to SLO 1.2)
3. What concept did James Gibson introduce in ecological psychology? (Linked to SLO 1.2)
4. Name two factors that shape human-environment relationships. (Linked to SLO 1.4)
5. Which environmental problem is associated with increased interpersonal conflict and reduced privacy? (Linked to SLO 1.5)

Short-Answer Questions

6. Explain how cognition influences the way humans respond to their physical environment. (Linked to SLO 1.3)
7. Describe the concept of affordances and explain why it is important in ecological psychology. (Linked to SLO 1.2)
8. What are two contemporary challenges facing environmental psychology, and why are they significant? (Linked to SLO 1.5)

Long-Answer Questions

9. Analyse the factors that shape human-environment relationships and explain how these factors combine to produce variation in environmental experience among individuals and groups. (Linked to SLO 1.4)
10. Evaluate the ways in which environmental problems affect psychological well-being and discuss the implications for the practice of environmental psychology. (Linked to SLO 1.5)

Answers to Concept Check Questions 1

Objective Questions

1. Environmental psychology is a branch of psychology that studies the relationship between people and their physical settings, examining how environments influence thought, emotion, and behaviour.
2. Environment, behaviour, and perception.
3. Affordances.
4. Cultural background and personal history, or physical characteristics of the environment.
5. Overcrowding.



Short-Answer Questions

6. Cognition allows individuals to process, interpret, and evaluate environmental information through memory and attention. This mental processing shapes how people assess the quality of a space and determines whether they approach, avoid, or adapt their behaviour within it.
7. Affordances are the action possibilities that an environment offers to an individual, such as a bench affording sitting or a staircase affording climbing. The concept is important because it explains how people perceive environments in terms of what they can do in them, linking perception directly to behaviour.
8. The growth of dense urban areas with limited green space and the psychological effects of climate change are two significant contemporary challenges. They matter because they affect the mental health of large populations and require environmental psychologists to inform the design of cities and support communities dealing with environmental uncertainty.

Long-Answer Questions

9. **Basic response:** Cultural background shapes the meanings attached to environments. Personal history determines preferences based on past experience. Physical characteristics of the environment, such as noise and layout, directly affect comfort and behaviour. Together these factors mean that no two individuals experience the same setting identically.

Value-added response: Understanding this variation is important for designing environments that are inclusive and responsive to diverse users. For example, a public space that feels safe and welcoming to one cultural group may feel uncomfortable to another due to differences in spatial norms and aesthetic preferences. Environmental psychologists must account for this diversity in applied work.

10. **Basic response:** Noise and overcrowding cause stress and reduce productivity. Pollution generates anxiety and distress. These effects have implications for how environments should be designed and managed to support mental health.

Value-added response: Environmental psychology has a practical role in identifying what makes environments harmful and proposing interventions, such as noise barriers, green space provision, and participatory planning, that can reduce environmental stress. It also has a role in educating communities and advocating for policy changes that prioritise environmental quality as a component of public health.

Answers to Pilot Questions 1

Part 1.1

1. The study of the relationship between people and their physical settings.
2. Geography, architecture, or ecology.
3. To inform the design of built environments to improve human well-being.
4. Environment, behaviour, and perception.
5. Because rapid urbanisation, overcrowding, pollution, and climate change have created new psychological pressures for individuals and communities.

Part 1.2



1. The process by which individuals interpret and make sense of sensory information from their surroundings.
2. James Gibson.
3. Overcrowding.
4. Because understanding how individuals act in and respond to environments is central to the field's aim of improving environmental design and promoting well-being.
5. Noisy environments reduce concentration, while crowded spaces can increase stress and aggression.

Part 1.3

1. It allows individuals to mentally process and evaluate environmental information, guiding decisions about how to act within a given setting.
2. Past encounters with environments shape expectations and preferences, while imagination allows people to anticipate how an unfamiliar setting might feel before entering it.
3. Cultural background, personal history, and physical characteristics of the environment.
4. In some cultures, open communal spaces are valued as gathering places, while in others, enclosed private spaces are preferred, reflecting different cultural norms around social interaction.
5. Because cultural background, personal history, and the physical features of settings all interact differently for each individual, producing unique combinations of preferences, responses, and meanings.

Part 1.4

1. Noise and overcrowding, or pollution and insanitary conditions.
2. Reduced privacy, increased interpersonal conflict, and heightened stress.
3. Overcrowding.
4. It reduces access to restorative natural environments, increases exposure to noise and crowding, and has been linked to higher rates of anxiety, depression, and social withdrawal.
5. Because environmental burdens such as pollution and noise are often concentrated in poorer communities, creating unequal psychological impacts that the field must address to promote equitable well-being.

References and Attributions 1

Illustrations



- *Plate 1.1 A person navigating a built urban environment:* AI-generated using the prompt “Generate a photograph of a person walking through a busy urban street surrounded by buildings, illustrating the built environment studied in environmental psychology.” Suggested OER search string: “open educational resource image person urban built environment street.”
- *Plate 1.2 The relationship between environment, behaviour, and perception:* AI-generated using the prompt “Generate a simple diagram showing the three-way relationship between environment, behaviour, and perception in environmental psychology with labelled arrows.” Suggested OER search string: “open educational resource diagram environment behaviour perception relationship.”
- *Figure 1.1 Gibson's concept of affordances in ecological psychology:* AI-generated using the prompt “Create a labelled diagram showing Gibson's concept of affordances: how a physical setting such as a park bench or staircase offers different action possibilities to different individuals.” Suggested OER search string: “open educational resource diagram Gibson affordances ecological psychology.”
- *Plate 1.3 Cultural variation in how people relate to their environment:* AI-generated using the prompt “Generate a photograph of people from diverse cultural backgrounds interacting differently with a shared outdoor public space, illustrating cultural variation in human-environment relationships.” Suggested OER search string: “open educational resource image cultural diversity public space human environment interaction.”
- *Box 1.2 Key environmental stressors and their psychological effects:* AI-generated using the prompt “Generate a simple text box listing key environmental stressors including noise, overcrowding, and pollution, alongside their main psychological effects such as stress, reduced productivity, and anxiety.” Suggested OER search string: “open educational resource text box environmental stressors psychological effects noise overcrowding pollution.”

General References

1. Bell, P. A., Greene, T. C., Fisher, J. D., and Baum, A. (2001). *Environmental psychology* (5th ed.). Lawrence Erlbaum Associates.
2. Gibson, J. J. (1979). *The ecological approach to visual perception*. Houghton Mifflin.
3. Stokols, D., and Altman, I. (Eds.). (1987). *Handbook of environmental psychology* (Vols. 1 and 2). Wiley.
4. Gifford, R. (2007). *Environmental psychology: Principles and practice* (4th ed.). Optimal Books.
5. Kaplan, S., and Kaplan, R. (1989). *The experience of nature: A psychological perspective*. Cambridge University Press.



Series 2

Course code: EVM 208

Course title: Environmental Psychology and Perception

Course credit load: 2 Units

List of Series:

- Series 1: Scope and Concepts of Environmental Psychology
- **Series 2: Perception, Cognition and Environmental Images**
- Series 3: Stress, Behaviour and Social Interaction in the Environment
- Series 4: Environmental Perception, Human Behaviour and Assessment Techniques
- Series 5: Quality of Environment, Preferences and Decision Making

Series Outline for Series 2: Perception, Cognition and Environmental Images

- **Part 1 (2.1): Environmental Perception and Its Processes**
 - Sub-Part 2.1.1: The nature and processes of environmental perception
 - Sub-Part 2.1.2: Origins of the perceived environment
- **Part 2 (2.2): Cognition and Mental Maps**
 - Sub-Part 2.2.1: Environmental cognition and spatial knowledge
 - Sub-Part 2.2.2: Mental maps and their formation
- **Part 3 (2.3): Environmental Images**
 - Sub-Part 2.3.1: The concept of environmental images
 - Sub-Part 2.3.2: Approaches to environmental perception
- **Part 4 (2.4): Factors Influencing Perception and Perceptual Variation**
 - Sub-Part 2.4.1: Individual and cultural factors in environmental perception
 - Sub-Part 2.4.2: Perceptual classification of environments



Introduction

How we see, interpret, and mentally organise our surroundings is at the heart of environmental psychology. Perception and cognition mediate the relationship between people and the environments they inhabit, shaping preferences, emotions, behaviour, and decision making. The images we form of our environments, whether of a neighbourhood, a city, or a natural landscape, guide how we move through the world and how we relate to places. Understanding these processes is therefore fundamental to the study of how humans interact with their physical settings.

The aim of this Series is to examine the processes of environmental perception and cognition, explore the concept of environmental images and mental maps, and consider the factors that produce variation in how different individuals and groups perceive and classify their environments.

We shall commence this Series by examining the nature and processes of environmental perception and tracing the origins of how perceived environments are formed. Next, we will explore environmental cognition and the concept of mental maps, considering how people build and use spatial knowledge. We will then examine environmental images and the main approaches to studying environmental perception. Finally, we will consider how individual and cultural factors produce variation in perception and how environments can be classified according to perceptual criteria.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 2.1** explain the nature and processes of environmental perception,
- **SLO 2.2** describe the nature of environmental cognition and explain how mental maps are formed,
- **SLO 2.3** define the concept of environmental images and describe the main approaches to environmental perception,
- **SLO 2.4** identify the individual and cultural factors that produce variation in environmental perception, and
- **SLO 2.5** explain how environments can be classified according to perceptual and behavioural criteria.

2.1 Environmental Perception And Its Processes

2.1.1 The nature and processes of environmental perception

Environmental perception is the process through which people select, organise, and interpret information from their physical surroundings. Unlike simple sensation, which involves the passive receipt of sensory data, perception is an active cognitive process shaped by attention, expectation, past experience, and cultural context. In an environmental setting, perception



involves simultaneously processing multiple streams of sensory information, including visual, auditory, olfactory, and tactile inputs, to form a coherent understanding of a place. This integrated perceptual experience guides how people evaluate their surroundings and decide how to behave within them.

Fill in the blank: Unlike passive sensation, environmental perception is an active _____ process shaped by attention, experience, and cultural context.

2.1.2 Origins of the perceived environment

The perceived environment does not arise from sensory input alone. It is constructed through an interaction between the **physical properties** of a setting, such as scale, complexity, and sensory qualities, and the **psychological state** of the individual, including mood, motivation, and prior knowledge. Environmental psychologists have identified that people do not perceive all aspects of a setting equally but selectively attend to features that are relevant to their current needs or interests. This selective attention means that the same physical environment can give rise to very different perceived environments for different individuals or groups.

Fill in the blank: The perceived environment is shaped by the physical properties of a setting and the _____ state of the individual, including mood, motivation, and prior knowledge.



Short description: A photograph of the same street scene experienced differently by two people: one looking at a shop window and another looking at directional signage, illustrating selective attention in environmental perception.

Plate 2.1 Selective attention in environmental perception



Pilot questions 2.1

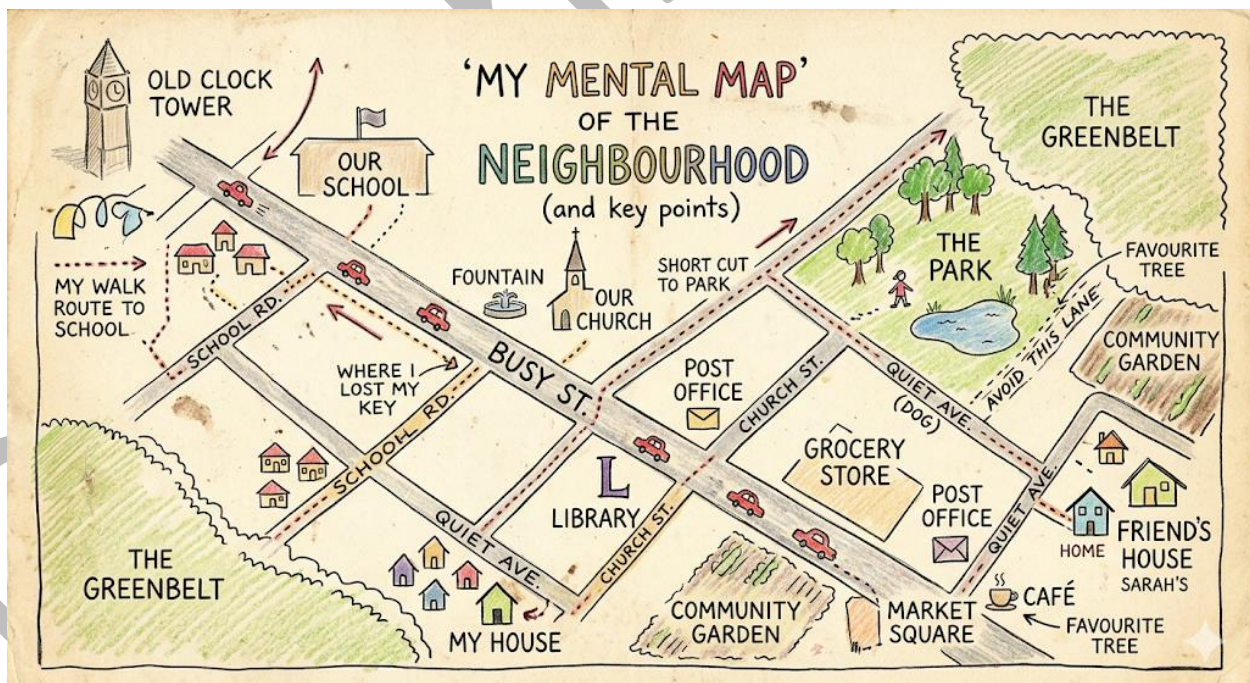
6. Which of the following best describes environmental perception?
7. What distinguishes perception from simple sensation?
8. Which two factors combine to produce the perceived environment?
9. Name two types of sensory input involved in environmental perception.
10. Why can the same physical environment give rise to different perceived environments for different people?

2.2 Cognition And Mental Maps

2.2.1 Environmental cognition and spatial knowledge

Environmental cognition refers to the mental processes through which people acquire, store, and use information about their spatial environment. It includes the knowledge individuals build up about the layout of spaces, the location of landmarks and routes, and the relationships between places. This spatial knowledge is accumulated through direct experience of moving through environments as well as through maps, descriptions, and visual representations. Environmental cognition enables people to navigate their surroundings, make decisions about movement, and form preferences for particular places over others.

Fill in the blank: Environmental cognition includes the knowledge individuals build about the layout of spaces, the location of _____, and the relationships between places.



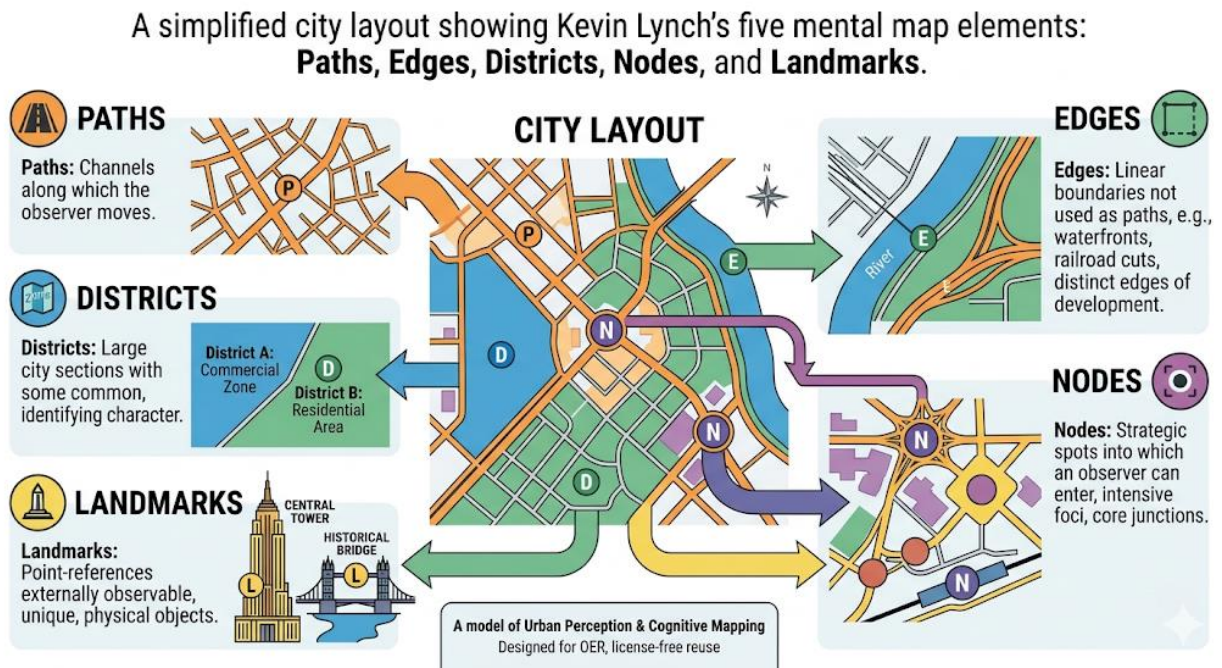
Short description: A hand-drawn sketch map of a familiar neighbourhood showing key landmarks, routes, and spatial relationships, representing a mental map.



2.2.2 Mental maps and their formation

A **mental map** is an internal representation of a spatial environment that an individual constructs through experience. The concept was developed by Kevin Lynch, who identified five key elements that people use to organise their mental maps of cities: **paths**, **edges**, **districts**, **nodes**, and **landmarks**. Mental maps are formed gradually through repeated navigation of a space and are shaped by individual differences in spatial ability, familiarity with the environment, and the salience of particular features.

Fill in the blank: Kevin Lynch identified five elements of mental maps, including paths, edges, districts, nodes, and _____.



Short description: A diagram illustrating Kevin Lynch's five elements of mental maps: paths, edges, districts, nodes, and landmarks, applied to a stylised city layout.

Figure 2.1 Kevin Lynch's five elements of mental maps applied to a city

Pilot questions 2.2

6. Which of the following best describes environmental cognition?
7. Who developed the concept of mental maps in relation to urban environments?
8. Name three of Kevin Lynch's five elements of mental maps.



9. Why are mental maps important for how people navigate and relate to their surroundings?
10. Give one example of how familiarity with an environment affects the accuracy of a person's mental map.

2.3 Environmental Images

2.3.1 The concept of environmental images

An **environmental image** is the mental representation that an individual holds of a particular environment, encompassing its physical layout, sensory qualities, associated meanings, and emotional significance. Environmental images are not simple copies of reality but are selective, distorted, and enriched by personal and cultural associations. Kevin Lynch used the term **imageability** to describe the quality of a physical environment that evokes a strong, vivid, and organised image in the observer. High imageability is associated with environments that are distinctive, legible, and easy to navigate, such as cities with memorable landmarks and clear spatial structure.

Fill in the blank: Kevin Lynch used the term _____ to describe the quality of a physical environment that evokes a strong and vivid mental image in the observer.

2.3.2 Approaches to environmental perception

Several theoretical approaches have been developed to explain how people perceive their environments. The **cognitive approach** emphasises the role of mental processing, memory, and schemas in organising environmental information. The **psychophysical approach** focuses on the direct relationship between measurable physical properties of the environment and subjective responses, such as how noise levels relate to perceived comfort. The **phenomenological approach** explores the lived, subjective experience of environments as felt and inhabited by individuals, emphasising meaning and embodied engagement with place.

Fill in the blank: The _____ approach to environmental perception focuses on the direct relationship between measurable physical properties of the environment and subjective human responses.





Short description: A photograph of a highly legible city environment featuring distinctive landmarks, clear pathways, and recognisable districts, illustrating the concept of imageability.
 Plate 2.3 A highly imageable city environment with clear landmarks and spatial structure

Pilot questions 2.3

6. What is an environmental image?
7. What does Kevin Lynch mean by the term imageability?
8. Name three theoretical approaches to environmental perception.
9. Give one example of how personal associations can influence an individual's environmental image.
10. Why are environmental images considered selective and distorted rather than accurate copies of reality?

2.4 Factors Influencing Perception And Perceptual Variation

2.4.1 Individual and cultural factors in environmental perception

Environmental perception is not uniform but varies considerably across individuals and cultural groups. At the individual level, factors such as **age**, **gender**, **prior experience**, and **personality** influence what aspects of an environment are attended to and how they are interpreted. At the cultural level, norms, values, and symbolic meanings attached to particular spaces and landscape types shape perceptual responses. Research has shown, for example, that people



from different cultural backgrounds differ in their aesthetic evaluations of natural and urban landscapes, their sense of spatial distance, and their comfort with different levels of environmental complexity.

Fill in the blank: At the individual level, factors such as age, gender, prior experience, and _____ influence how people perceive and interpret their environment.

2.4.2 Perceptual classification of environments

Environments can be classified according to perceptual criteria, grouping settings that produce similar psychological responses together. One widely used framework distinguishes between **natural environments**, which are perceived as restorative and stress-reducing; **built environments**, which include urban and architectural settings with varied perceptual qualities; and **social environments**, defined by the density and nature of human presence. Perceptual classification helps researchers and designers identify the qualities that make environments supportive or harmful to psychological well-being and informs the planning of spaces for specific human needs.

Fill in the blank: Natural environments are often perceived as _____ and stress-reducing in contrast to many built urban settings.

Environment Type	Perceptual & Psychological Characteristics
Natural	Characterized by organic forms, soft fascinations (like moving water), and multisensory inputs. Psychologically, these often promote restoration , stress reduction, and "attention restoration."
Built	Man-made structures defined by linear geometry, hard surfaces, and artificial lighting. These can offer security and functionality but may lead to cognitive fatigue if sensory complexity is poorly managed.
Social	Defined by the presence and density of other people. Perceptually, this involves reading cues like body language and tone. Psychologically, it impacts belonging, social identity , and sometimes stress due to crowding.

Box 2.2 Perceptual classification of environments and their psychological characteristics
Short description: Text box listing natural, built, and social environments alongside their key perceptual and psychological characteristics.



Pilot questions 2.4

6. Name two individual factors that influence environmental perception.
7. How do cultural norms influence the perception of natural landscapes?
8. What are the three broad perceptual categories of environments?
9. How does the perceptual classification of environments support environmental design?
10. Why are natural environments generally perceived as more restorative than dense urban settings?

Series Summary

This Series has examined how people perceive, cognitively organise, and form images of their environments. We began by exploring the nature and processes of environmental perception and the origins of the perceived environment. We then considered environmental cognition and the formation of mental maps, including Kevin Lynch's influential framework of five urban elements. Following that, we examined the concept of environmental images and imageability, and reviewed the cognitive, psychophysical, and phenomenological approaches to studying environmental perception. Finally, we considered how individual and cultural factors produce variation in perception and how environments can be classified perceptually according to their psychological characteristics.

By working through this Series, you should now be able to explain the nature and processes of environmental perception, describe environmental cognition and mental map formation, define environmental images and describe the main approaches to perception, identify the factors that produce perceptual variation, and explain perceptual classification of environments. These abilities align with the Series Learning Outcomes (SLOs) and prepare you to engage with the more applied topics in subsequent series of this course.

Glossary of Terms

- **Cognitive approach:** An approach to environmental perception that emphasises the role of mental processing, memory, and schemas in organising information from the environment.
- **Environmental cognition:** The mental processes through which people acquire, store, and use spatial information about their environment, including the formation of mental maps.
- **Environmental image:** The mental representation that an individual holds of a particular environment, shaped by its physical properties, personal associations, and cultural meanings.
- **Environmental perception:** The active cognitive process through which people select, organise, and interpret sensory information from their physical surroundings.



- **Imageability:** A term used by Kevin Lynch to describe the quality of a physical environment that evokes a strong, vivid, and organised mental image in the observer.
- **Mental map:** An internal spatial representation of an environment constructed through experience, comprising elements such as paths, edges, districts, nodes, and landmarks, as identified by Kevin Lynch.
- **Perceptual classification:** The grouping of environments according to the psychological responses they typically produce, such as natural, built, and social environments.
- **Phenomenological approach:** An approach to environmental perception that explores the lived, subjective experience of environments as felt and inhabited by individuals, emphasising meaning and embodied engagement with place.
- **Psychophysical approach:** An approach to environmental perception that examines the direct relationship between measurable physical properties of the environment and subjective human responses.
- **Selective attention:** The tendency of individuals to focus on particular features of an environment that are relevant to their current needs or interests, while filtering out other information.

Concept Check Questions 2

Objective Questions

6. Define environmental perception and explain what makes it different from simple sensation. (Linked to SLO 2.1)
7. Identify two elements of Kevin Lynch's five-element framework for mental maps. (Linked to SLO 2.2)
8. What term did Kevin Lynch use to describe the quality of an environment that evokes a vivid mental image? (Linked to SLO 2.3)
9. Name one individual factor and one cultural factor that influence environmental perception. (Linked to SLO 2.4)
10. What are the three broad perceptual categories of environments? (Linked to SLO 2.5)

Short-Answer Questions

6. Explain how environmental cognition enables people to navigate and make decisions about their surroundings. (Linked to SLO 2.2)
7. Describe the three main approaches to studying environmental perception and briefly distinguish between them. (Linked to SLO 2.3)
8. Why do environmental images differ between individuals who inhabit the same physical environment? (Linked to SLO 2.4)



Long-Answer Questions

9. Analyse the concept of mental maps, discussing how they are formed, what elements they contain, and why they are important for understanding human behaviour in urban environments. (Linked to SLO 2.2 and SLO 2.3)
10. Evaluate the role of individual and cultural factors in producing variation in environmental perception and discuss the implications of this variation for the design of built environments. (Linked to SLO 2.4 and SLO 2.5)

Answers to Concept Check Questions 2

Objective Questions

6. Environmental perception is the active cognitive process of selecting, organising, and interpreting sensory information from the environment. Unlike sensation, which is passive receipt of stimuli, perception involves active mental processing shaped by attention, experience, and culture.
7. Paths and landmarks, or edges, districts, and nodes.
8. Imageability.
9. Individual factor: age or prior experience. Cultural factor: cultural norms or symbolic meanings attached to spaces.
10. Natural, built, and social environments.

Short-Answer Questions

6. Environmental cognition provides people with stored spatial knowledge of landmarks, routes, and the layout of spaces. This knowledge guides navigation decisions, helps people anticipate what lies ahead in a familiar environment, and informs choices about where to go and how to get there.
7. The cognitive approach focuses on mental processing and schemas. The psychophysical approach examines links between physical environmental properties and subjective responses. The phenomenological approach explores the lived experience of environments, emphasising personal meaning and embodied engagement.
8. Because each person's environmental image is shaped by their unique combination of personal history, selective attention, and cultural background, the same setting will be attended to, interpreted, and valued differently by different individuals even when they occupy the same space.

Long-Answer Questions

9. **Basic response:** Mental maps are internal spatial representations built through experience. Kevin Lynch identified five elements: paths, edges, districts, nodes, and landmarks. They are important because they guide navigation, shape preferences, and influence how people relate to urban places.

Value-added response: Mental maps are also distorted and selective, reflecting individual differences in spatial ability, familiarity, and the salience of landmarks. This has practical implications: planners and designers can improve the legibility and imageability of urban spaces



by ensuring that key elements such as landmarks and clear pathways are present and distinctive, making cities easier to understand and navigate.

11. **Basic response:** Age, gender, prior experience, and personality shape individual perception. Cultural norms and values shape collective perceptual responses. Designers must account for these differences to create environments that are responsive to diverse users.

Value-added response: Understanding perceptual variation has significant design implications. A space perceived as welcoming by one group may feel uncomfortable or exclusionary to another. Inclusive design requires research into the perceptual preferences and needs of different user groups, integrating findings into decisions about spatial layout, sensory qualities, and the symbolic content of built environments.

Answers to Pilot Questions 2

Part 2.1

6. The active cognitive process of selecting, organising, and interpreting sensory information from physical surroundings.
7. Perception involves active mental processing, while sensation is the passive receipt of sensory stimuli.
8. The physical properties of the setting and the psychological state of the individual.
9. Paths and landmarks, or edges, districts, and nodes.
10. Because selective attention, personal history, and cultural background lead each person to notice, interpret, and value different aspects of the same setting.

Part 2.2

6. The mental processes through which people acquire, store, and use spatial information about their environment.
7. Kevin Lynch.
8. Natural, built, and social environments.
9. They enable navigation, help people anticipate spatial sequences, and guide decisions about movement and place preference.
10. A person who has lived in a city for many years will have more detailed and accurate mental maps of its districts and routes than a recent arrival who has had limited direct experience of the space.

Part 2.3

6. A mental representation of an environment encompassing its physical layout, sensory qualities, associated meanings, and emotional significance.



7. Imageability is the quality of a physical environment that evokes a strong, vivid, and organised image in the observer, associated with distinctive and legible settings.
8. The cognitive, psychophysical, and phenomenological approaches.
9. A person who spent childhood holidays in a particular forest may hold a strongly positive and emotionally rich image of that setting based on personal memories and associations.
10. Because they are shaped by selective attention and personal and cultural associations rather than by objective reality, so different observers bring different frameworks to the same physical setting.

Part 2.4

6. Age and prior experience, or gender and personality.
7. Cultural norms and symbolic values shape what people find aesthetically pleasing or meaningful in a landscape, leading to variation in preference and emotional response across cultural groups.
8. Natural, built, and social environments.
9. It allows designers to identify the psychological characteristics of different setting types and plan spaces that meet specific human needs, such as providing restorative natural areas in dense urban settings.
10. Because natural settings typically offer complexity and coherence without excessive stimulation, support attention restoration, and are associated with lower stress and greater psychological well-being compared to busy, noisy urban environments.

References and Attributions 2

Illustrations

- *Plate 2.1 Selective attention in environmental perception:* AI-generated using the prompt “Generate a photograph of two people on the same street, one focused on a shop window and one looking at signage, to illustrate how individuals selectively perceive different aspects of the same environment.” Suggested OER search string: “open educational resource image selective attention urban environment perception.”
- *Plate 2.2 A sketch map representing an individual's mental map of a neighbourhood:* AI-generated using the prompt “Generate an image of a hand-drawn sketch map of a neighbourhood showing landmarks, roads, and key spaces to illustrate the concept of a mental map in environmental cognition.” Suggested OER search string: “open educational resource image mental map cognitive map neighbourhood sketch.”



- *Figure 2.1 Kevin Lynch's five elements of mental maps applied to a city:* AI-generated using the prompt “Create a labelled diagram of a simplified city layout showing Kevin Lynch's five mental map elements: paths, edges, districts, nodes, and landmarks.” Suggested OER search string: “open educational resource diagram Kevin Lynch mental map elements city paths edges districts nodes landmarks.”
- *Plate 2.3 A highly imageable city environment with clear landmarks and spatial structure:* AI-generated using the prompt “Generate a photograph of a distinctive and legible city streetscape with recognisable landmarks, clear pathways, and a strong visual identity to illustrate the concept of environmental imageability.” Suggested OER search string: “open educational resource image imageable city landmarks legible urban environment.”
- *Box 2.2 Perceptual classification of environments and their psychological characteristics:* AI-generated using the prompt “Generate a simple text box classifying environments into natural, built, and social types, with brief notes on their typical perceptual and psychological characteristics.” Suggested OER search string: “open educational resource text box perceptual classification environments natural built social.”

General References

6. Lynch, K. (1960). *The image of the city*. MIT Press.
7. Ittelson, W. H. (1978). Environmental perception and urban experience. *Environment and Behavior*, 10(2), 193-213.
8. Bell, P. A., Greene, T. C., Fisher, J. D., and Baum, A. (2001). *Environmental psychology* (5th ed.). Lawrence Erlbaum Associates.
9. Gifford, R. (2007). *Environmental psychology: Principles and practice* (4th ed.). Optimal Books.
10. Kaplan, S., and Kaplan, R. (1989). *The experience of nature: A psychological perspective*. Cambridge University Press.



Series 3

Course code: EVM 208

Course title: Environmental Psychology and Perception

Course credit load: 2 Units

List of Series:

- Series 1: Scope and Concepts of Environmental Psychology
- Series 2: Perception, Cognition and Environmental Images
- **Series 3: Stress, Behaviour and Social Interaction in the Environment**
- Series 4: Environmental Perception, Human Behaviour and Assessment Techniques
- Series 5: Quality of Environment, Preferences and Decision Making

Series Outline for Series 3: Stress, Behaviour and Social Interaction in the Environment

- **Part 1 (3.1): Environmental Stress and Its Sources**
 - Sub-Part 3.1.1: Environmental stressors: noise, crowding, and pollution
 - Sub-Part 3.1.2: Stress and strain: psychological and physiological responses
- **Part 2 (3.2): Environmental Behaviour and Experience**
 - Sub-Part 3.2.1: Behavioural responses to environmental conditions
 - Sub-Part 3.2.2: Experience, imagination, and behavioural classification of environments
- **Part 3 (3.3): Social Interaction and the Environment**
 - Sub-Part 3.3.1: Personal space and proxemics
 - Sub-Part 3.3.2: Privacy, territoriality, and crowding
- **Part 4 (3.4): Theories of Social Interaction and Environmental Design**
 - Sub-Part 3.4.1: Personal construct theory and social interaction
 - Sub-Part 3.4.2: Implications of social interaction research for environmental design

Introduction

The physical environment exerts powerful effects on human behaviour, emotion, and social interaction. Stressors such as noise, overcrowding, and pollution generate psychological and



physiological strain that can impair well-being and alter how people relate to one another. At the same time, the settings in which social life takes place shape the character of human interaction, influencing the amount of personal space people claim, the degree of privacy they seek, and the social norms that govern behaviour in shared spaces. Understanding these dynamics is essential for designing environments that support positive social experience and protect psychological health.

The aim of this Series is to examine how environmental stressors affect human behaviour and well-being, explore the concepts of personal space, privacy, and territoriality as foundations of social interaction in the environment, and consider how theories of social interaction inform the design of physical settings.

We shall commence this Series by examining environmental stressors, including noise, crowding, and pollution, and their psychological and physiological effects. Next, we will explore how people behave in response to environmental conditions and how experience and imagination shape behavioural classification of environments. We will then examine personal space, proxemics, privacy, and territoriality as key concepts in the social psychology of the environment. Finally, we will consider personal construct theory and the implications of social interaction research for environmental design.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 3.1** identify the major environmental stressors and explain their psychological and physiological effects,
- **SLO 3.2** describe how humans behave in response to environmental conditions and how experience shapes behavioural classification of environments,
- **SLO 3.3** explain the concepts of personal space, proxemics, privacy, and territoriality and their role in social interaction,
- **SLO 3.4** describe personal construct theory and apply it to human-environment social interaction, and
- **SLO 3.5** evaluate the implications of social interaction research for the design of built environments.

3.1 Environmental Stress And Its Sources

3.1.1 Environmental stressors: noise, crowding, and pollution

Environmental stressors are conditions in the physical environment that place demands on individuals and require adaptive responses. **Noise** is one of the most pervasive stressors in urban environments, disrupting concentration, sleep, and communication and increasing cardiovascular arousal. **Crowding** refers to the subjective experience of having insufficient space relative to the number of people present, and is associated with elevated stress, reduced sense of control, and increased aggression. **Pollution** in its various forms, including air, water,



and noise pollution, generates both direct health hazards and psychological distress, particularly in communities that are aware of environmental contamination and feel unable to control it.

Fill in the blank: The subjective experience of having insufficient space relative to the number of people present is known as _____.

3.1.2 Stress and strain: psychological and physiological responses

The distinction between **stress** and **strain** is important in environmental psychology. Stress refers to the demands placed on an individual by an environmental stressor, while strain refers to the resulting psychological or physiological response. Physiological strain can include elevated blood pressure, increased heart rate, and disrupted sleep. Psychological strain manifests as irritability, reduced concentration, anxiety, and lowered tolerance for frustration. Prolonged exposure to environmental stressors can produce chronic strain, with lasting consequences for mental and physical health, particularly in populations with limited resources to cope with or escape from stressful environments.

Fill in the blank: Prolonged exposure to environmental stressors can produce chronic _____, with lasting consequences for mental and physical health.



Short description: A photograph of a noisy, congested urban street with heavy traffic and crowds of pedestrians, illustrating environmental stressors in a city setting.

Plate 3.1 Noise and crowding as environmental stressors in an urban setting

Pilot questions 3.1

11. Which of the following is an example of an environmental stressor?



12. What distinguishes stress from strain in environmental psychology?
13. What is the subjective experience of crowding?
14. Name two physiological responses that can result from exposure to environmental stressors.
15. Why are populations with limited resources particularly vulnerable to chronic environmental strain?

3.2 Environmental Behaviour And Experience

3.2.1 Behavioural responses to environmental conditions

Human behaviour in response to environmental conditions follows recognisable patterns. When environments are perceived as stimulating or threatening, individuals may exhibit **approach** behaviours, moving toward stimuli that are attractive, or **avoidance** behaviours, withdrawing from conditions perceived as unpleasant or harmful. Environmental conditions also influence **helping behaviour**, with research suggesting that positive ambient conditions such as pleasant temperature and lower noise levels increase willingness to assist others, while adverse conditions reduce prosocial behaviour. Adaptive behaviours, including noise-reducing strategies and spatial adjustment, allow individuals to manage the demands of stressful environments.

Fill in the blank: Behaviours in which individuals move toward attractive environmental stimuli are known as _____ behaviours.



Short description: A photograph contrasting a person moving toward an attractive green park space and another person moving away from a noisy, crowded area, illustrating approach and avoidance behaviours.



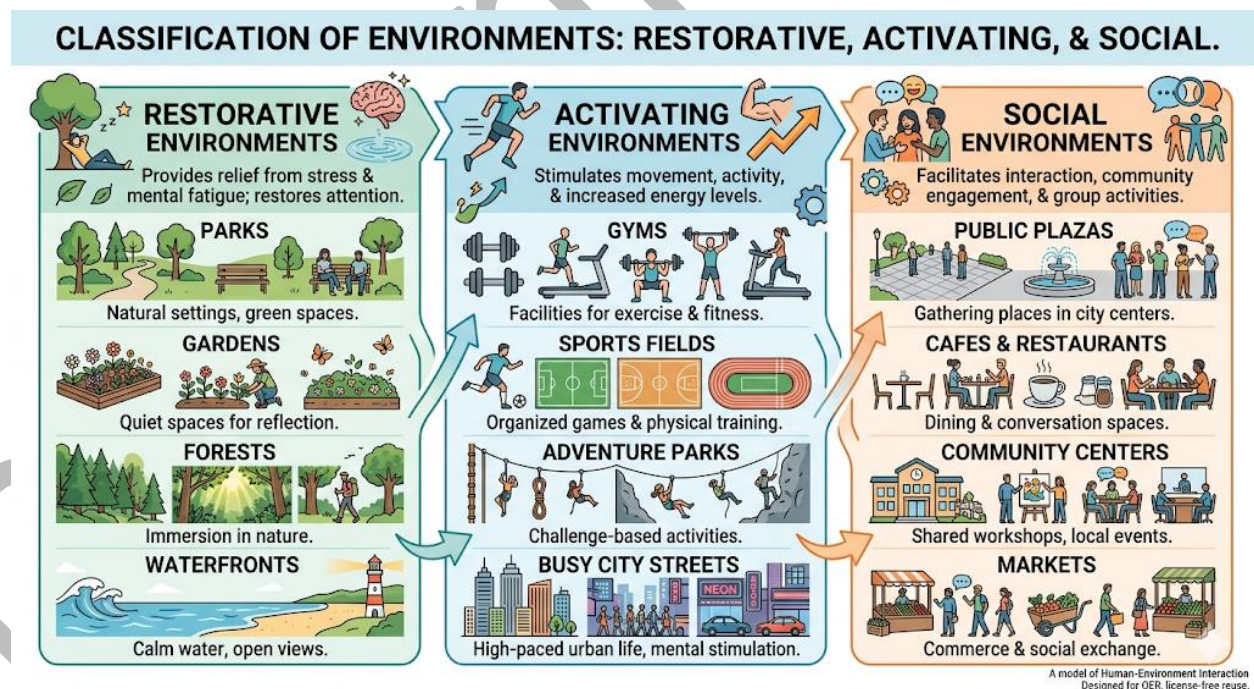
3.2.2 Experience, imagination, and behavioural classification of environments

Beyond physical characteristics, individuals classify environments based on the **behavioural experiences** they afford and how they are perceived through **imagination** and past experience. Even for places not yet visited, imagination allows individuals to form mental categories that influence their willingness to approach or avoid those settings.

In environmental psychology, environments are often classified into three functional categories based on how they impact human state and interaction:

- **Restorative Environments:** These are spaces that promote recovery from mental fatigue and stress, allowing the mind to rest (e.g., quiet parks or natural settings).
- **Activating Environments:** These settings are designed to stimulate physical or mental activity and engagement (e.g., gyms, sports arenas, or busy workshops).
- **Social Environments:** These spaces are specifically configured to facilitate human interaction and communal activity (e.g., public plazas, cafes, or community centers).

Fill in the blank: Spaces that promote recovery from stress and allow the mind to rest are described as **restorative** spaces in behavioural classification frameworks.



Short description: A diagram showing the behavioural classification of environments into restorative, activating, and social categories with examples of each.



Pilot questions 3.2

11. Which of the following describes avoidance behaviour in an environmental context?
12. How do positive ambient conditions affect helping behaviour?
13. What is the role of imagination in how people relate to environments they have not yet visited?
14. Why is behavioural classification of environments useful for environmental designers?
15. Give one example of a restorative environment and explain why it supports recovery from stress.

3.3 Social Interaction And The Environment

3.3.1 Personal space and proxemics

Personal space is the invisible, portable zone of space that individuals maintain around themselves during social interaction. When this space is violated, people typically experience discomfort and seek to restore it by increasing distance or turning away. The study of how people use space in social contexts is known as **proxemics**, a concept developed by Edward Hall, who identified four spatial zones: **intimate**, **personal**, **social**, and **public**. These zones differ in size across cultures and contexts, and understanding them is essential for designing spaces that accommodate comfortable social interaction.

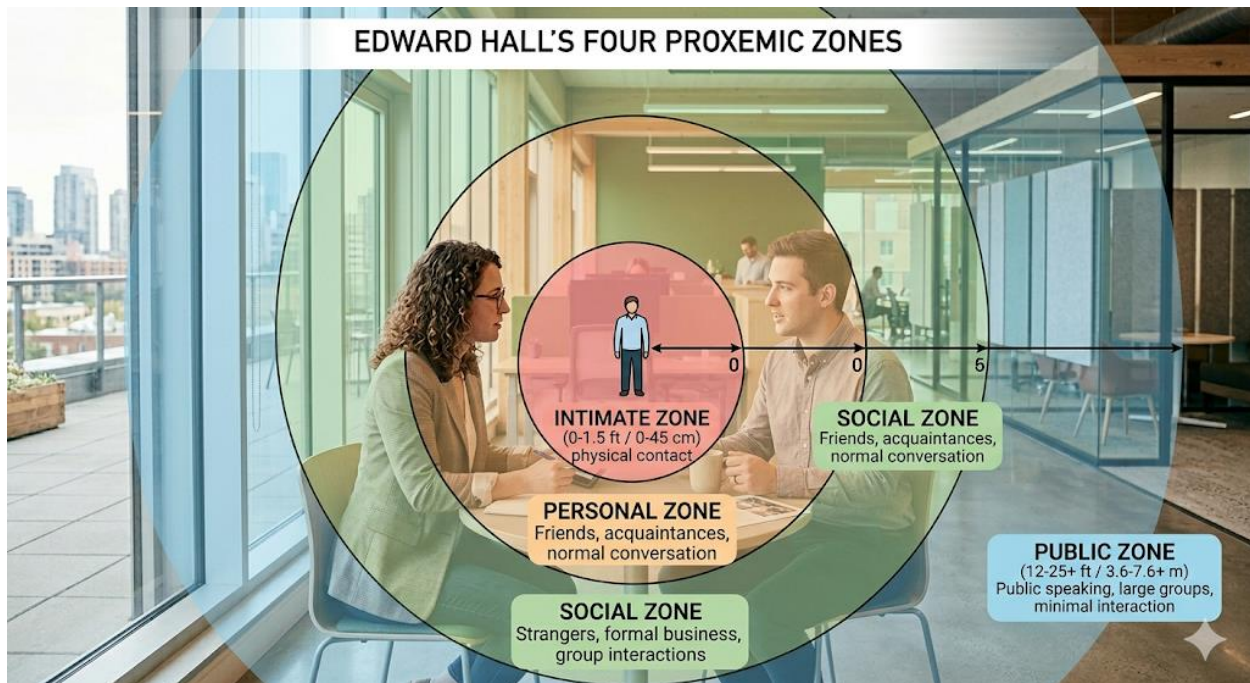
Fill in the blank: The study of how people use space in social contexts, developed by Edward Hall, is known as _____.

3.3.2 Privacy, territoriality, and crowding

Privacy is the selective control of access to oneself or one's group, allowing individuals to regulate their social interactions and maintain a sense of autonomy. **Territoriality** refers to the tendency to claim, mark, and defend specific areas or objects, and serves functions of identity, security, and social organisation. **Crowding** as a social experience differs from mere physical density in that it involves the subjective perception of having too little space for the number of people present. When privacy and territorial needs are consistently unmet, individuals may experience heightened stress, reduced sense of control, and deteriorating social relationships.

Fill in the blank: The selective control of access to oneself or one's group in order to regulate social interactions is known as _____.





Short description: A diagram showing Edward Hall's four proxemic zones: intimate, personal, social, and public, as concentric circles around a central figure.
 Plate 3.3 Edward Hall's four proxemic zones of personal space

Pilot questions 3.3

11. What is personal space and what typically happens when it is violated?
12. Name Edward Hall's four proxemic zones.
13. How does privacy differ from territoriality?
14. Give one example of territorial behaviour in an everyday social setting.
15. Why does crowding produce stress even when physical density remains unchanged?

3.4 Theories Of Social Interaction And Environmental Design

3.4.1 Personal construct theory and social interaction

Personal construct theory, developed by George Kelly, proposes that individuals understand and interpret their world, including their social and physical environments, through a system of personal constructs. These constructs are bipolar mental frameworks, such as safe versus threatening or familiar versus strange, through which experiences are organised and anticipated. In the context of social interaction with the environment, personal constructs shape how individuals evaluate settings, predict the behaviour of others within them, and decide how to act. Because constructs are personal, different individuals may arrive at fundamentally



different interpretations of the same environment, affecting their social behaviour and their sense of comfort within it.

Fill in the blank: George Kelly's personal construct theory proposes that individuals organise and interpret their experiences through a system of _____ mental frameworks.

3.4.2 Implications of social interaction research for environmental design

Research on personal space, privacy, territoriality, and social interaction has important implications for the design of physical environments. Buildings, public spaces, and urban neighbourhoods can be designed to support the privacy needs of residents, provide appropriate personal space buffers in communal areas, and allow individuals to exercise territorial control over their immediate surroundings. For example, the arrangement of seating in public spaces influences the degree to which people interact or maintain distance. Residential layouts that offer semi-private transitional zones between private dwellings and public streets can reduce unwanted social exposure while still promoting community cohesion.

Fill in the blank: Residential layouts that include semi-private zones between private dwellings and public streets can reduce unwanted social _____ while promoting community cohesion.

Concept	Implications for Design
Personal Space	Designs must respect "invisible boundaries." In public spaces, this means providing flexible seating or sufficient room in high-traffic areas (like transit hubs) to prevent feelings of crowding and stress.
Privacy	Architecture should offer a "spectrum of enclosure." Effective design provides users with the ability to control their level of social contact through the use of partitions, soundproofing, and transitional zones between public and private areas.
Territoriality	Space should allow for "personalization" and clear boundaries. Using features like fences, unique landscaping, or changes in floor textures helps people claim a sense of ownership, which can increase security and community maintenance.

Box 3.2 Key concepts from social interaction research and their design implications

Short description: Text box listing personal space, privacy, and territoriality as key concepts from social interaction research alongside their main implications for built environment design.



Pilot questions 3.4

11. What are personal constructs according to George Kelly?
12. How do personal constructs influence behaviour in social environments?
13. How can the arrangement of seating in a public space influence social interaction?
14. How do semi-private transitional zones in residential design support privacy needs?
15. Why is it important for environmental designers to understand research on personal space and territoriality?

Series Summary

This Series has examined how environmental stressors affect human behaviour and well-being, and how social interaction is shaped by the physical environments in which it takes place. We began by identifying noise, crowding, and pollution as major stressors and distinguishing between stress and strain as concepts. We then explored how people behave in response to environmental conditions and how experience and imagination inform the behavioural classification of settings. Following that, we examined personal space, proxemics, privacy, territoriality, and crowding as foundational concepts in the social psychology of the environment. Finally, we considered personal construct theory and the implications of social interaction research for the design of physical environments.

By working through this Series, you should now be able to identify major environmental stressors and explain their psychological and physiological effects, describe behavioural responses to environmental conditions and classify environments behaviourally, explain the concepts of personal space, proxemics, privacy, and territoriality, describe personal construct theory, and evaluate the implications of social interaction research for environmental design. These abilities align with the Series Learning Outcomes (SLOs) and prepare you for the more applied topics in subsequent series of this course.

Glossary of Terms

- **Approach behaviour:** Actions in which an individual moves toward or engages with environmental stimuli perceived as attractive or rewarding.
- **Avoidance behaviour:** Actions in which an individual withdraws from or avoids environmental conditions perceived as unpleasant or threatening.
- **Crowding:** The subjective experience of having insufficient space relative to the number of people present, associated with stress, reduced control, and increased aggression.
- **Environmental stressor:** A condition in the physical environment that places demands on individuals and requires adaptive responses, such as noise, crowding, or pollution.



- **Personal construct theory:** George Kelly's theory proposing that individuals interpret and anticipate their world through a personal system of bipolar mental frameworks called constructs.
- **Personal space:** The invisible, portable zone of space that individuals maintain around themselves during social interaction, the invasion of which typically causes discomfort.
- **Privacy:** The selective control of access to oneself or one's group, enabling individuals to regulate their social interactions and maintain a sense of autonomy.
- **Proxemics:** The study of how people use space in social contexts, developed by Edward Hall, who identified four spatial zones: intimate, personal, social, and public.
- **Strain:** The psychological or physiological response to environmental stress, including elevated blood pressure, anxiety, irritability, and reduced concentration.
- **Territoriality:** The tendency of individuals or groups to claim, mark, and defend specific areas or objects, serving functions of identity, security, and social organisation.

Concept Check Questions 3

Objective Questions

11. Define the term environmental stressor and give two examples. (Linked to SLO 3.1)
12. Identify the difference between approach behaviour and avoidance behaviour in response to environmental conditions. (Linked to SLO 3.2)
13. Name the four proxemic zones identified by Edward Hall. (Linked to SLO 3.3)
14. Name the theorist associated with personal construct theory and state one key feature of the theory. (Linked to SLO 3.4)
15. State one way in which environmental design can respond to research on personal space and privacy. (Linked to SLO 3.5)

Short-Answer Questions

6. Explain how prolonged exposure to environmental stressors can produce chronic strain and describe two of its consequences. (Linked to SLO 3.1)
7. Describe how the behavioural classification of environments into restorative, activating, and social categories can assist environmental designers. (Linked to SLO 3.2)
8. Explain how privacy and territoriality serve complementary functions in social environments. (Linked to SLO 3.3)

Long-Answer Questions

9. Analyse the role of personal space and proxemics in shaping social interaction in built environments, discussing the implications of Hall's proxemic zones for the design of public and communal spaces. (Linked to SLO 3.3 and SLO 3.5)



10. Evaluate the contribution of personal construct theory to our understanding of how individuals respond to and behave within social environments, and discuss its relevance for environmental psychology practice. (Linked to SLO 3.4)

Answers to Concept Check Questions 3

Objective Questions

11. An environmental stressor is a condition that places demands on individuals and requires adaptive responses. Examples: noise and crowding, or pollution and extreme temperatures.
12. Approach behaviour involves moving toward attractive stimuli, while avoidance behaviour involves withdrawing from unpleasant or threatening conditions.
13. Intimate, personal, social, and public.
14. George Kelly. Key feature: individuals interpret and anticipate the world through a system of personal, bipolar constructs.
15. Providing semi-private transitional zones in residential layouts, or arranging seating in public spaces to allow users to regulate distance from others.

Short-Answer Questions

6. Chronic strain results when individuals are unable to recover from environmental stressors over extended periods. Consequences include persistent elevated blood pressure and increased risk of cardiovascular disease, as well as long-term psychological effects such as chronic anxiety and impaired cognitive function.
7. Restorative environments can be incorporated into urban plans to provide stress recovery opportunities. Activating spaces can be positioned near areas intended for exercise and engagement, while social spaces can be designed to facilitate interaction through appropriate layout and amenities.
8. Privacy allows individuals to control access to themselves and regulate the pace of social interaction. Territoriality provides a spatial basis for identity and security. Together they create the conditions for comfortable, predictable, and autonomous social life in shared environments.

Long-Answer Questions

9. **Basic response:** Personal space provides a comfort buffer in interaction, and Hall's four zones indicate the distances appropriate for different social relationships. Designing public spaces that allow users to choose their distance from others supports comfort and social engagement.

Value-added response: Proxemic norms vary across cultures, which means that universal design standards based on one cultural norm may not serve diverse populations. Effective environmental design must take cultural variation into account, ensuring that spaces offer a range of social distances and are not configured in ways that force unwanted proximity on users from cultures with larger personal space preferences.

12. **Basic response:** Personal construct theory explains that individuals use unique bipolar frameworks to interpret environments, predicting behaviour of others and making



decisions about how to act. This contributes to understanding why the same social setting can feel comfortable to one person and threatening to another.

Value-added response: For environmental psychology practice, the theory highlights the importance of attending to individual differences in how settings are interpreted. Practitioners cannot assume that all users of a space will share the same constructs about it. Consultation with users and participatory design processes allow the range of personal constructs present in a community to inform environmental decisions, producing settings that are more responsive to diverse needs.

Answers to Pilot Questions 3

Part 3.1

11. Noise, crowding, or pollution.
12. Stress refers to the demands placed by a stressor on an individual, while strain refers to the resulting psychological or physiological response.
13. The subjective experience of having insufficient space relative to the number of people present.
14. Approach behaviour involves moving toward attractive stimuli, while avoidance behaviour involves withdrawing from unpleasant or threatening conditions.
15. Because they lack the financial or social means to move away from stressful conditions or to use coping strategies such as soundproofing or accessing restorative environments.

Part 3.2

11. Moving away from or avoiding an unpleasant environment, such as leaving a noisy space.
12. They increase the likelihood that people will assist others, as pleasant conditions reduce cognitive load and increase positive affect.
13. Providing semi-private transitional zones in residential layouts, or arranging seating in public spaces to allow users to regulate distance from others.
14. It allows them to identify the psychological function a space should serve and incorporate appropriate design features, such as natural elements for restorative spaces or flexible seating for social spaces.
15. A quiet park with natural features that allow mental fatigue to recover and stress to dissipate without requiring focused attention.



Part 3.3

11. Personal space is the invisible zone around an individual that, when violated, causes discomfort and prompts the person to restore distance.
12. Intimate, personal, social, and public.
13. Privacy involves controlling access to oneself as a person, while territoriality involves claiming and defending physical spaces or objects.
14. Placing personal belongings on a table in a library to mark and reserve a workspace.
15. Because crowding is a subjective experience: the same number of people in a space may feel crowded to one person but not to another, depending on their personal space norms and sense of control.

Part 3.4

11. Bipolar mental frameworks through which individuals organise and interpret their experiences, such as safe versus threatening or familiar versus strange.
12. They shape how individuals evaluate settings, predict the behaviour of others within them, and decide how to act, leading different people to respond very differently to the same social environment.
13. Providing semi-private transitional zones in residential layouts, or arranging seating in public spaces to allow users to regulate distance from others.
14. By providing buffers between private dwellings and public areas, residents can control when and how much they interact with neighbours and passers-by, reducing unwanted intrusion.
15. Because designs that ignore how people regulate personal space and territory can create uncomfortable, conflict-prone, or underused spaces that fail to support positive social interaction and well-being.

References and Attributions 3

Illustrations

- *Plate 3.1 Noise and crowding as environmental stressors in an urban setting:*
AI-generated using the prompt “Generate a photograph of a busy, congested urban street with heavy traffic and large crowds of pedestrians, illustrating noise and crowding as environmental stressors.” Suggested OER search string: “open educational resource image urban noise crowding traffic congestion environmental stress.”



- *Plate 3.2 Approach and avoidance behaviours in response to environmental conditions:* AI-generated using the prompt “Generate a split image showing one person approaching a calm green park and another person walking away from a noisy crowded street to illustrate approach and avoidance environmental behaviours.” Suggested OER search string: “open educational resource image approach avoidance behaviour environment park crowded street.”
- *Figure 3.1 Behavioural classification of environments:* AI-generated using the prompt “Create a labelled diagram classifying environments into restorative, activating, and social categories with examples such as parks, gyms, and public plazas.” Suggested OER search string: “open educational resource diagram behavioural classification environments restorative activating social.”
- *Plate 3.3 Edward Hall's four proxemic zones of personal space:* AI-generated using the prompt “Generate a labelled diagram showing Edward Hall's four proxemic zones as concentric circles: intimate, personal, social, and public distance, around a central human figure.” Suggested OER search string: “open educational resource diagram Edward Hall proxemics zones intimate personal social public distance.”
- *Box 3.2 Key concepts from social interaction research and their design implications:* AI-generated using the prompt “Generate a simple text box listing personal space, privacy, and territoriality as key social interaction concepts and briefly describing their implications for the design of buildings and public spaces.” Suggested OER search string: “open educational resource text box personal space privacy territoriality environmental design implications.”

General References

11. Hall, E. T. (1966). *The hidden dimension*. Doubleday.
12. Kelly, G. A. (1955). *The psychology of personal constructs* (Vols. 1 and 2). Norton.
13. Bell, P. A., Greene, T. C., Fisher, J. D., and Baum, A. (2001). *Environmental psychology* (5th ed.). Lawrence Erlbaum Associates.
14. Gifford, R. (2007). *Environmental psychology: Principles and practice* (4th ed.). Optimal Books.
15. Altman, I. (1975). *The environment and social behavior: Privacy, personal space, territory, and crowding*. Brooks/Cole.



Series 4

Course code: EVM 208

Course title: Environmental Psychology and Perception

Course credit load: 2 Units

List of Series:

- Series 1: Scope and Concepts of Environmental Psychology
- Series 2: Perception, Cognition and Environmental Images
- Series 3: Stress, Behaviour and Social Interaction in the Environment
- **Series 4: Environmental Perception, Human Behaviour and Assessment Techniques**
- Series 5: Quality of Environment, Preferences and Decision Making

Series Outline for Series 4: Environmental Perception, Human Behaviour and Assessment Techniques

- **Part 1 (4.1): Origins and Approaches to Environmental Perception**
 - Sub-Part 4.1.1: Origins of the perceived environment
 - Sub-Part 4.1.2: Approaches to studying environmental perception
- **Part 2 (4.2): Environmental Perception and Human Behaviour**
 - Sub-Part 4.2.1: How perception shapes behaviour in the environment
 - Sub-Part 4.2.2: Perceptual and behavioural classification of environments
- **Part 3 (4.3): Environmental Assessment Techniques**
 - Sub-Part 4.3.1: Methods and tools for environmental assessment
 - Sub-Part 4.3.2: Evaluating human responses to environments
- **Part 4 (4.4): Applications and Challenges in Environmental Assessment**
 - Sub-Part 4.4.1: Applications of environmental assessment in planning and design
 - Sub-Part 4.4.2: Challenges and limitations of environmental assessment



Introduction

Understanding how people perceive their environments and how those perceptions shape behaviour is at the core of applied environmental psychology. Equally important is the ability to measure and evaluate human responses to physical settings systematically, so that evidence can be used to inform decisions about environmental planning, design, and management. This Series brings together the theoretical foundations of environmental perception and the practical techniques that environmental psychologists use to assess how environments are experienced, evaluated, and used by the people who inhabit them.

The aim of this Series is to examine the origins and major approaches to environmental perception, explore how perception influences human behaviour in environmental contexts, and introduce the key techniques used to assess environmental quality and human responses to settings, while also considering the applications and limitations of these assessment methods.

We shall commence this Series by examining the origins of the perceived environment and the main theoretical approaches to environmental perception. Next, we will consider how perceptions shape behaviour and how environments can be classified according to both perceptual and behavioural criteria. We will then introduce the methods and tools used in environmental assessment and explore how human responses to environments are evaluated. Finally, we will consider the practical applications of environmental assessment in planning and design, and examine the challenges and limitations that practitioners must navigate.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 4.1** explain the origins of the perceived environment and describe the major approaches to studying environmental perception,
- **SLO 4.2** explain how environmental perception shapes human behaviour and classify environments using perceptual and behavioural criteria,
- **SLO 4.3** identify and describe the key methods and tools used in environmental assessment,
- **SLO 4.4** apply environmental assessment techniques to planning and design contexts, and
- **SLO 4.5** evaluate the challenges and limitations associated with environmental assessment methods.

4.1 Origins And Approaches To Environmental Perception

4.1.1 Origins of the perceived environment



The perceived environment is not a direct copy of physical reality but a construction shaped by the interaction between the objective properties of a setting and the subjective processes of the perceiver. Its origins lie in the sensory information available in a place, the perceptual schemas and categories the individual brings to it, and the cultural and personal meanings attached to particular environmental features. Environmental psychologists trace the perceived environment to three principal sources: the **physical environment** itself, the **cognitive and emotional state** of the individual, and the **social and cultural context** in which perception takes place. Together these sources explain why the same objective setting can give rise to radically different perceived environments for different individuals or groups.

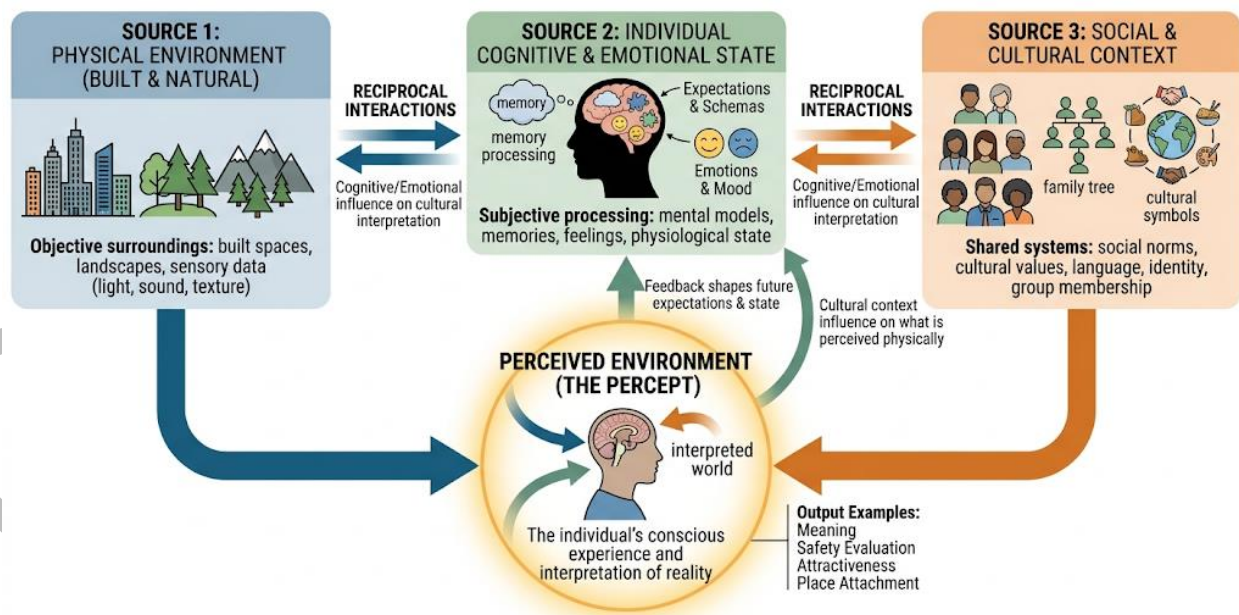
Fill in the blank: The perceived environment originates from the physical environment, the cognitive and emotional state of the individual, and the _____ and cultural context in which perception takes place.

4.1.2 Approaches to studying environmental perception

Several theoretical approaches have been developed to study how people perceive their environments. The **transactional approach** views the person and the environment as inseparable, each continuously influencing the other. The **organismic approach** considers the person as a whole system responding to environmental demands in an integrated fashion. The **mechanistic approach** treats the person as a passive recipient of environmental stimuli and examines responses in terms of input-output relationships. Each approach offers different insights into the perception-behaviour relationship and informs different research and design strategies.

Fill in the blank: The _____ approach to environmental perception views the person and environment as inseparable, each continuously influencing the other.

SOURCES AND INTERACTION OF THE PERCEIVED ENVIRONMENT



Short description: A diagram illustrating the three sources of the perceived environment: the



physical environment, the cognitive and emotional state of the individual, and the social and cultural context, with arrows showing their interaction.

Plate 4.1 The three sources of the perceived environment

Pilot questions 4.1

16. Which of the following is one of the three principal sources of the perceived environment?
17. What does the transactional approach to environmental perception emphasise?
18. How does the mechanistic approach differ from the transactional approach?
19. Name the three theoretical approaches to studying environmental perception described in this sub-part.
20. Why can the same physical environment give rise to different perceived environments for different individuals?

4.2 Environmental Perception And Human Behaviour

4.2.1 How perception shapes behaviour in the environment

Perception and behaviour are closely linked in environmental psychology. How a person perceives a setting, in terms of its safety, comfort, legibility, or aesthetic quality, directly influences the actions they take within it. A space perceived as unsafe may generate avoidance and reduce time spent there, while one perceived as inviting and well-ordered encourages exploration and social engagement. **Environmental affordances**, the action possibilities perceived in a setting, play a central role in linking perception to behaviour, as people act on what they perceive to be available to them rather than on the objective physical properties of the environment alone.

Fill in the blank: Action possibilities perceived in a setting, which link perception directly to behaviour, are known as environmental _____.



HOW PERCEPTION SHAPES ENVIRONMENTAL BEHAVIOUR



A SAFE, INVITING PLAZA

AN AVOIDED, NEGLECTED SPACE

Comparing a planned, maintained urban hub to a neglected 'non-place,' illustrating how different environments encourage social interaction and positive use, or feelings of fear and avoidance, defining our interactions with the city.

Short description: A photograph contrasting two urban spaces: one perceived as safe and inviting with people socialising, and one perceived as unsafe and avoided.

Plate 4.2 Contrasting perceptions of urban spaces shaping different behavioural responses

Revised SubPart 4.2.2: Perceptual and Behavioural Classification

Environments are not just physical containers; they are classified by psychologists based on how they are experienced and how they function for the people using them. This classification typically falls into two categories:

Perceptual Classification

This approach groups environments based on the **psychological and emotional responses** they evoke in an individual. Instead of looking at physical dimensions, this focuses on the "feel" of a place.

- **Examples:** Settings can be classified as **calm**, **stimulating**, **threatening**, or **ordered**.
- **Impact:** These perceptions determine whether a person feels comfortable enough to stay in a space or feels the need to leave immediately.

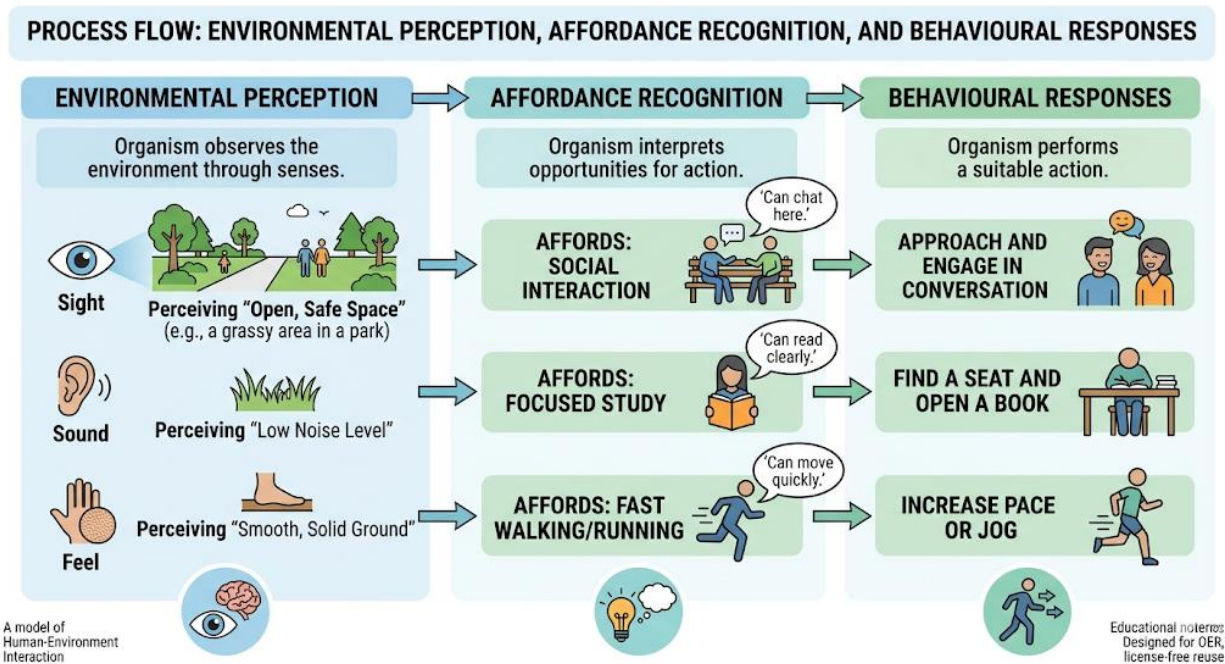
Behavioural Classification

This approach groups environments according to the **patterns of activity and social interaction** they are designed to support.

- **Examples:** Environments are categorized into functional types such as **work**, **leisure** (e.g., parks), **transit** (e.g., bus stations), or **residential** settings.



- **Integrated Use:** Researchers use both classifications together to ensure that the emotional "character" of a space (perceptual) matches the activities it is supposed to facilitate (behavioural).



Short description: A diagram showing the relationship between environmental perception, affordances, and behavioural outcomes, with examples of perceptual inputs and resulting behaviours.

Figure 4.1 The perception-affordance-behaviour relationship in environmental psychology

Pilot questions 4.2

16. How does the perception of safety in an environment influence behaviour?
17. What are environmental affordances and how do they link perception to behaviour?
18. What is the difference between perceptual and behavioural classification of environments?
19. Why do researchers use both perceptual and behavioural classification together?
20. Give one example of a behavioural environment type and describe the activity patterns associated with it.

4.3 Environmental Assessment Techniques



4.3.1 Methods and tools for environmental assessment

Environmental assessment involves the systematic collection and analysis of information about how people perceive, evaluate, and respond to physical settings. The main methods include **questionnaires and rating scales**, which measure subjective responses to environmental attributes such as comfort, safety, and aesthetics; **behavioural observation**, which records how people actually use and move through spaces; and **cognitive mapping**, which asks participants to draw or describe their spatial representations of environments to reveal how places are organised in memory. Each method captures different dimensions of the human-environment relationship and is suited to different research questions.

Fill in the blank: The method of environmental assessment that asks participants to draw or describe their spatial representations of places is known as _____ mapping.

4.3.2 Evaluating human responses to environments

Beyond measuring subjective responses, environmental psychologists use a range of techniques to evaluate how people respond physiologically and behaviourally to settings. **Physiological measures**, such as heart rate, skin conductance, and cortisol levels, provide objective indicators of stress and arousal in response to environmental conditions. **Post-occupancy evaluation** assesses how well a built environment meets the needs of its users after occupation, gathering data through interviews, surveys, and observation to identify what is working well and what requires improvement. These evaluation techniques provide evidence that can inform the iterative improvement of designed environments over time.

Fill in the blank: The evaluation of how well a built environment meets users' needs after it has been occupied is known as post-_____ evaluation.



Short description: A photograph of a researcher conducting a post-occupancy evaluation



interview with a building user in a modern office or public building interior.
Plate 4.3 A researcher conducting a post-occupancy evaluation with a building user

Pilot questions 4.3

16. Name three methods used in environmental assessment.
17. What does cognitive mapping reveal about how people relate to their environments?
18. What is post-occupancy evaluation and when is it carried out?
19. Give one example of a physiological measure used to assess environmental stress responses.
20. Why is it valuable to combine questionnaire data with physiological and observational measures in environmental assessment?

4.4 Applications And Challenges In Environmental Assessment

4.4.1 Applications of environmental assessment in planning and design

Environmental assessment techniques are applied in a wide range of planning and design contexts to improve the quality of physical settings. In **urban planning**, assessment data inform decisions about land use, public space design, and the location of amenities. In **architectural design**, they guide decisions about spatial layout, lighting, acoustics, and materials to enhance the well-being of occupants. In **environmental impact assessment**, psychological data on community perceptions and quality of life are incorporated alongside technical environmental data to provide a more complete picture of the impacts of proposed developments.

Fill in the blank: In architectural design, assessment data guide decisions about spatial layout, lighting, acoustics, and materials to enhance the _____ of occupants.

4.4.2 Challenges and limitations of environmental assessment

Despite their value, environmental assessment methods face a number of challenges. **Subjectivity** is a persistent concern, as self-report measures are susceptible to social desirability bias and individual differences in response styles. **Generalisability** is also limited, as findings from one setting or population may not transfer to others. **Ethical considerations** arise when assessment involves observation in public spaces or the collection of physiological data, requiring careful attention to consent and privacy. Finally, the integration of findings from multiple methods with different assumptions can be methodologically complex, requiring expertise in both quantitative and qualitative research traditions.

Fill in the blank: The extent to which findings from an environmental assessment can be transferred to other settings or populations is referred to as _____.



Challenge	Brief Note
Subjectivity	Many assessments rely on qualitative judgments or "expert opinions," which can lead to biased results depending on who is performing the evaluation.
Limited Generalisability	Environmental data is often highly site-specific. A method that works for a wetland in Florida may not produce accurate or relevant results for a desert in Arizona.
Ethical Considerations	Determining "value" is difficult. Assessments must weigh the needs of current human populations against biodiversity preservation and the rights of future generations.

Box 4.2 Key challenges and limitations of environmental assessment methods
Short description: Text box listing subjectivity, limited generalisability, and ethical considerations as key challenges in environmental assessment, with brief explanations of each.

Pilot questions 4.4

16. Name two planning or design contexts in which environmental assessment techniques are applied.
17. How are psychological assessment data used in environmental impact assessment?
18. What is meant by subjectivity as a challenge in environmental assessment?
19. What ethical considerations arise when conducting environmental assessment in public spaces?
20. Why is limited generalisability considered a significant limitation of environmental assessment findings?



Series Summary

This Series has brought together the theoretical foundations of environmental perception and the practical techniques used to assess human responses to physical settings. We began by examining the origins of the perceived environment and the transactional, organismic, and mechanistic approaches to studying perception. We then explored how perception shapes behaviour through affordances and considered how environments can be classified using both perceptual and behavioural criteria. Following that, we introduced the key methods of environmental assessment, including questionnaires, behavioural observation, cognitive mapping, and post-occupancy evaluation. Finally, we examined the applications of these techniques in planning and design contexts and evaluated the challenges and limitations that practitioners must address.

By working through this Series, you should now be able to explain the origins of the perceived environment and describe its main theoretical approaches, explain how perception shapes behaviour and classify environments accordingly, identify and describe key environmental assessment methods, apply these techniques to planning and design contexts, and evaluate their challenges and limitations. These abilities align with the Series Learning Outcomes (SLOs) and prepare you for the final Series on environmental quality, preferences, and decision making.

Glossary of Terms

- **Behavioural classification:** The grouping of environments according to the patterns of activity and interaction they support, such as work, leisure, transit, or residential settings.
- **Behavioural observation:** An environmental assessment method that systematically records how people actually use and move through physical settings.
- **Cognitive mapping:** An environmental assessment technique in which participants draw or describe their spatial representations of environments to reveal how places are organised in memory.
- **Environmental affordances:** The action possibilities that people perceive to be available in a physical setting, linking perception directly to behavioural responses.
- **Mechanistic approach:** A theoretical approach to environmental perception that treats the person as a passive recipient of stimuli and analyses responses in terms of input-output relationships.
- **Organismic approach:** A theoretical approach to environmental perception that considers the person as an integrated whole system responding to environmental demands.
- **Perceived environment:** A subjective construction of a setting arising from the interaction of its physical properties, the individual's cognitive and emotional state, and the social and cultural context of perception.
- **Post-occupancy evaluation:** A systematic assessment of how well a built environment meets the needs of its users, conducted after the building or space has been occupied.



- **Transactional approach:** A theoretical approach to environmental perception that views the person and the environment as inseparable, each continuously influencing and shaping the other.
- **Perceptual classification:** The grouping of environments according to the psychological responses they typically evoke, such as feelings of calm, stimulation, or threat.

Concept Check Questions 4

Objective Questions

16. State the three principal sources of the perceived environment. (Linked to SLO 4.1)
17. Define environmental affordances and explain their role in linking perception to behaviour. (Linked to SLO 4.2)
18. Name two methods used in environmental assessment and briefly describe each. (Linked to SLO 4.3)
19. Name two contexts in which environmental assessment techniques are applied in practice. (Linked to SLO 4.4)
20. State two challenges associated with environmental assessment methods. (Linked to SLO 4.5)

Short-Answer Questions

6. Explain the difference between the transactional and mechanistic approaches to environmental perception. (Linked to SLO 4.1)
7. Describe how perceptual and behavioural classification of environments are used together in environmental research and design. (Linked to SLO 4.2)
8. What are the ethical considerations that arise when using observation and physiological measures in environmental assessment? (Linked to SLO 4.5)

Long-Answer Questions

9. Analyse how environmental perception shapes human behaviour in physical settings, using the concept of affordances and referring to at least one approach to environmental perception. (Linked to SLO 4.1 and SLO 4.2)
10. Evaluate the strengths and limitations of the main environmental assessment techniques, and discuss how they can be combined to provide a more complete picture of human-environment relationships. (Linked to SLO 4.3 and SLO 4.5)

Answers to Concept Check Questions 4

Objective Questions

16. The physical environment, the cognitive and emotional state of the individual, and the social and cultural context.



17. Environmental affordances are the action possibilities perceived in a setting. They link perception to behaviour by directing individuals toward actions the environment appears to support rather than its objective physical properties alone.
18. Questionnaires and rating scales: measure subjective evaluations of environmental attributes. Cognitive mapping: participants draw or describe spatial representations of places to reveal mental organisation.
19. Urban planning and architectural design, or environmental impact assessment.
20. Subjectivity in self-report measures and limited generalisability of findings across settings or populations.

Short-Answer Questions

6. The transactional approach treats the person and environment as inseparable and mutually shaping, whereas the mechanistic approach treats the person as a passive recipient of stimuli, examining responses as outputs to environmental inputs without considering the active role of the perceiver.
7. Perceptual classification identifies the emotional character of settings, while behavioural classification identifies the activities they support. Using both together allows researchers and designers to ensure that settings not only feel appropriate to users but also facilitate the desired patterns of behaviour.
8. Observation in public spaces raises privacy concerns, requiring decisions about whether consent is needed. Physiological data collection involves bodily information, requiring explicit informed consent, clear data protection protocols, and careful management of participant comfort and wellbeing.

Long-Answer Questions

9. **Basic response:** Perception shapes behaviour by determining which affordances individuals act upon. A setting perceived as safe and legible encourages exploration, while one perceived as threatening promotes avoidance. The transactional approach highlights that these perceptions are not passive but arise from an ongoing interaction between the individual and the setting.

Value-added response: The perception-affordance-behaviour relationship also varies with individual and cultural factors. Different users of the same space may perceive different affordances and therefore behave differently within it. This has significant design implications: creating environments that serve diverse users requires understanding the range of perceptions and affordances that different groups bring to the same physical setting.

13. **Basic response:** Questionnaires offer breadth and ease of administration but are susceptible to subjectivity. Behavioural observation provides objective data on actual use but is time-consuming. Cognitive mapping reveals spatial knowledge but requires interpretation. Combining methods allows each to compensate for the weaknesses of the others, producing more reliable and comprehensive findings.

Value-added response: Mixed-method approaches that triangulate data from self-report, observation, and physiological measurement are considered best practice in environmental assessment. They allow practitioners to cross-validate findings and



develop a richer understanding of how settings are experienced, reducing the risk of drawing misleading conclusions from any single method alone.

Answers to Pilot Questions 4

Part 4.1

16. The cognitive and emotional state of the individual, or the social and cultural context.
17. That the person and environment are inseparable and each continuously shapes the other.
18. The mechanistic approach treats the person as a passive recipient of stimuli, while the transactional approach treats the person as an active participant mutually shaping and shaped by the environment.
19. Environmental affordances are the action possibilities perceived in a setting. They link perception to behaviour by directing individuals toward actions the environment appears to support rather than its objective physical properties alone.
20. Because the perceived environment is shaped not only by physical properties but also by the individual's cognitive and emotional state and by the social and cultural context, all of which differ across individuals and groups.

Part 4.2

16. It reduces time spent in the space and generates avoidance behaviour, as people move away from environments they perceive as threatening.
17. Affordances are the action possibilities perceived in a setting. They link perception to behaviour by directing people toward actions the environment appears to support.
18. Subjectivity in self-report measures and limited generalisability of findings across settings or populations.
19. Because using both provides a more complete picture, connecting how settings feel to how they are used, allowing designers to align perceptual qualities with desired behavioural outcomes.
20. A leisure environment such as a park, associated with relaxation, informal social interaction, and recreational physical activity.

Part 4.3

16. Questionnaires and rating scales, behavioural observation, and cognitive mapping.
17. It reveals how people spatially organise their knowledge of places, showing which features are most salient to them and how their internal representations may differ from objective maps.



18. Post-occupancy evaluation is a systematic assessment of how well a built environment meets users' needs, conducted after the space has been occupied and in use.
19. Skin conductance or heart rate, both of which indicate levels of physiological arousal and stress in response to environmental conditions.
20. Because each method captures different dimensions of the human-environment relationship, and combining them compensates for the weaknesses of any single approach, producing more reliable and comprehensive assessment findings.

Part 4.4

16. Urban planning and architectural design, or environmental impact assessment.
17. Community perceptions and quality of life data are incorporated alongside technical data to provide a more complete picture of how proposed developments will affect the people who live and work nearby.
18. Subjectivity in self-report measures and limited generalisability of findings across settings or populations.
19. Gaining informed consent and protecting participant privacy, particularly when recording behaviour or collecting physiological data without continuous interaction with participants.
20. Because findings from one setting or population cannot be assumed to apply elsewhere, restricting the usefulness of assessment results for informing policy or design decisions in different contexts.

References and Attributions 4

Illustrations

- *Plate 4.1 The three sources of the perceived environment:* AI-generated using the prompt “Generate a labelled diagram showing the three sources of the perceived environment: physical environment, individual cognitive and emotional state, and social and cultural context, with arrows indicating their interaction.” Suggested OER search string: “open educational resource diagram origins perceived environment physical cognitive cultural context.”
- *Plate 4.2 Contrasting perceptions of urban spaces shaping different behavioural responses:* AI-generated using the prompt “Generate a side-by-side photograph contrasting a safe and inviting urban plaza with people socialising and an avoided, neglected urban space, to illustrate how perception shapes environmental behaviour.” Suggested OER search string: “open educational resource image safe inviting urban space versus avoided neglected space perception behaviour.”



- *Figure 4.1 The perception-affordance-behaviour relationship in environmental psychology:* AI-generated using the prompt “Create a labelled diagram showing how environmental perception leads to affordance recognition and then to behavioural responses, with examples such as safe space leading to social interaction.” Suggested OER search string: “open educational resource diagram environmental perception affordance behaviour relationship.”
- *Plate 4.3 A researcher conducting a post-occupancy evaluation with a building user:* AI-generated using the prompt “Generate a photograph of a researcher interviewing a person inside a modern office building to illustrate the process of post-occupancy evaluation in environmental assessment.” Suggested OER search string: “open educational resource image researcher interview building occupant post-occupancy evaluation.”
- *Box 4.2 Key challenges and limitations of environmental assessment methods:* AI-generated using the prompt “Generate a simple text box listing the key challenges of environmental assessment methods: subjectivity, limited generalisability, and ethical considerations, with a brief note on each.” Suggested OER search string: “open educational resource text box challenges environmental assessment subjectivity generalisability ethics.”

General References

16. Gifford, R. (2007). *Environmental psychology: Principles and practice* (4th ed.). Optimal Books.
17. Preiser, W. F. E., Rabinowitz, H. Z., and White, E. T. (1988). *Post-occupancy evaluation*. Van Nostrand Reinhold.
18. Bell, P. A., Greene, T. C., Fisher, J. D., and Baum, A. (2001). *Environmental psychology* (5th ed.). Lawrence Erlbaum Associates.
19. Stokols, D., and Altman, I. (Eds.). (1987). *Handbook of environmental psychology* (Vols. 1 and 2). Wiley.
20. Gibson, J. J. (1979). *The ecological approach to visual perception*. Houghton Mifflin.



Series 5

Course code: EVM 208

Course title: Environmental Psychology and Perception

Course credit load: 2 Units

List of Series:

- Series 1: Scope and Concepts of Environmental Psychology
- Series 2: Perception, Cognition and Environmental Images
- Series 3: Stress, Behaviour and Social Interaction in the Environment
- Series 4: Environmental Perception, Human Behaviour and Assessment Techniques
- **Series 5: Quality of Environment, Preferences and Decision Making**

Series Outline for Series 5: Quality of Environment, Preferences and Decision Making

- **Part 1 (5.1): Quality of the Environment and Space Perception**
 - Sub-Part 5.1.1: Defining environmental quality and its dimensions
 - Sub-Part 5.1.2: Space perception and the experience of spatial quality
- **Part 2 (5.2): Environmental Preferences**
 - Sub-Part 5.2.1: Theories and models of environmental preference
 - Sub-Part 5.2.2: Factors influencing environmental preferences
- **Part 3 (5.3): Environmental Decision Making**
 - Sub-Part 5.3.1: The nature and process of environmental decision making
 - Sub-Part 5.3.2: Factors influencing environmental decisions
- **Part 4 (5.4): Environmental Decision Making in Practice**
 - Sub-Part 5.4.1: Individual and collective environmental decisions
 - Sub-Part 5.4.2: Improving environmental decision making

Introduction

The concluding Series of this course brings together themes of quality, preference, and decision making as they relate to the human experience of environments. People do not simply perceive and respond to their surroundings passively; they evaluate them, form preferences, and make decisions that are shaped by those evaluations. Whether choosing where to live, how to use a space, or how to respond to environmental risk, individuals and communities engage in



processes of environmental judgement that are influenced by perception, cognition, emotion, culture, and social context. Understanding these processes is essential for environmental psychology, urban planning, and sustainable development.

The aim of this Series is to examine the concept of environmental quality and space perception, explore the theories and factors that shape environmental preferences, and investigate the processes through which individuals and communities make decisions about their environments, including the factors that support or hinder more sustainable and informed decision making.

We shall commence this Series by defining environmental quality and examining how people perceive and evaluate spatial qualities of their surroundings. Next, we will explore the theories and factors that explain environmental preferences, considering both psychological and cultural influences. We will then examine the nature and process of environmental decision making and the factors that shape it. Finally, we will consider how environmental decisions are made in practice, at both individual and collective levels, and what strategies can improve the quality of these decisions for individuals and communities.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 5.1** define environmental quality and explain how people perceive and evaluate spatial qualities of their environment,
- **SLO 5.2** describe the main theories and factors that shape environmental preferences,
- **SLO 5.3** explain the nature and process of environmental decision making and identify the factors that influence it,
- **SLO 5.4** distinguish between individual and collective environmental decision making and evaluate their respective challenges, and
- **SLO 5.5** assess strategies that can improve the quality of environmental decision making at individual and community levels.

5.1 Quality Of The Environment And Space Perception

5.1.1 Defining environmental quality and its dimensions

Environmental quality refers to the degree to which a physical setting meets human needs and expectations across multiple dimensions. These dimensions include **physical quality**, concerning the sensory properties of the environment such as noise, air quality, and visual appearance; **functional quality**, relating to how well the environment supports the activities and needs of its users; and **social quality**, which concerns the degree to which a setting supports positive social interaction, a sense of community, and safety. Environmental quality is evaluated both objectively, through measurable environmental indicators, and subjectively, through the perceptions and judgements of those who inhabit or use a setting.



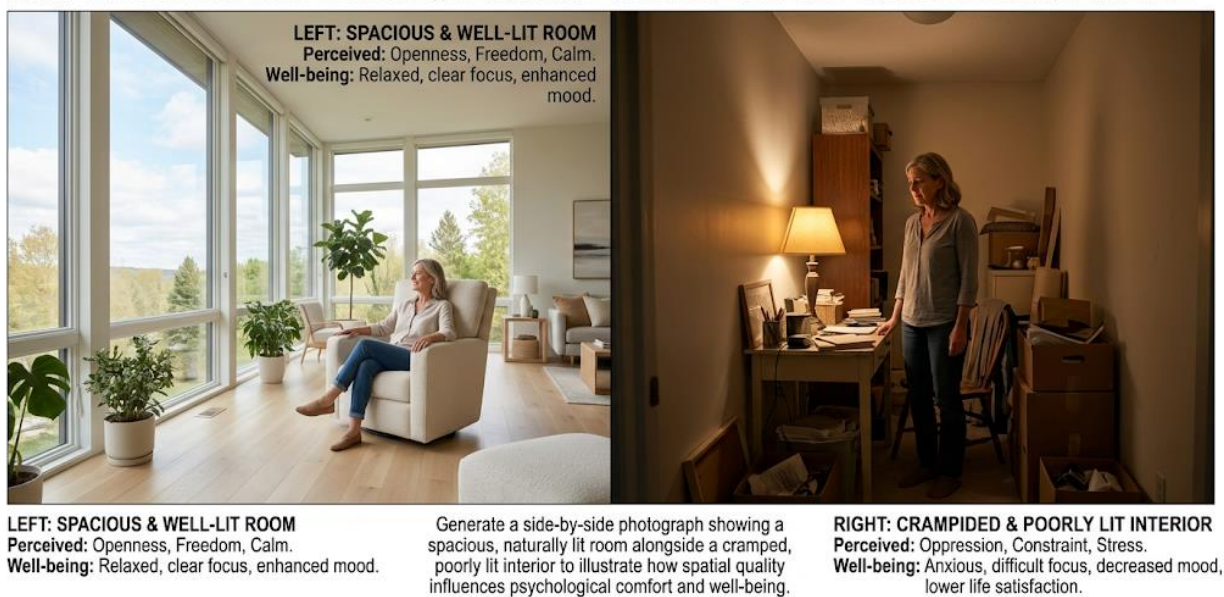
Fill in the blank: The dimension of environmental quality that concerns how well a setting supports the activities and needs of its users is known as _____ quality.

5.1.2 Space perception and the experience of spatial quality

Space perception refers to how individuals experience and evaluate the spatial properties of their environment, including its scale, enclosure, openness, and proportions. People respond to spatial qualities both cognitively and emotionally: a spacious and well-lit setting may generate feelings of freedom and comfort, while a cramped or disorienting space may produce anxiety. The perception of **spatial quality** is shaped by physical features such as ceiling height, natural light, ventilation, and acoustic conditions, as well as by the meanings and associations individuals bring to particular spatial types. Understanding space perception is central to the design of environments that support comfort, productivity, and well-being.

Fill in the blank: A spacious and well-lit setting may generate feelings of freedom and comfort, while a cramped or disorienting space may produce _____.

PLATE 5.1 CONTRASTING SPATIAL QUALITIES AND THEIR EFFECTS ON PSYCHOLOGICAL EXPERIENCE



OPEN EDUCATIONAL RESOURCE: This image is a diagrammatic photograph intended for use in environmental psychology, interior design, and architecture education.

Short description: A photograph contrasting two indoor spaces: a spacious, naturally lit, well-ventilated room and a cramped, poorly lit interior, illustrating how spatial quality affects psychological experience.

Plate 5.1 Contrasting spatial qualities and their effects on psychological experience

Pilot questions 5.1

21. Which of the following is a dimension of environmental quality?
22. What does social quality of the environment refer to?



23. How does ceiling height influence the perception of spatial quality?
24. Name the three dimensions of environmental quality described in this sub-part.
25. Why is it important to assess environmental quality both objectively and subjectively?

5.2 Environmental Preferences

5.2.1 Theories and models of environmental preference

Several theories have been developed to explain why people prefer certain environments over others. **Kaplan and Kaplan's preference model** proposes that preferences are driven by two cognitive needs: the need to understand the environment and the need to explore it. Their model identifies four qualities that predict preference: **coherence**, **complexity**, **legibility**, and **mystery**. **Ulrich's affective theory** proposes that initial aesthetic responses to environments are rapid and emotional rather than cognitive, with natural environments typically generating more positive emotional responses than built ones, particularly after stress.

Fill in the blank: Kaplan and Kaplan's preference model identifies four predictors of preference: coherence, complexity, legibility, and _____.



Short description: A photograph of a natural landscape with moderate visual complexity, coherent structure, and a partially hidden view suggesting mystery, illustrating the Kaplan preference model criteria.

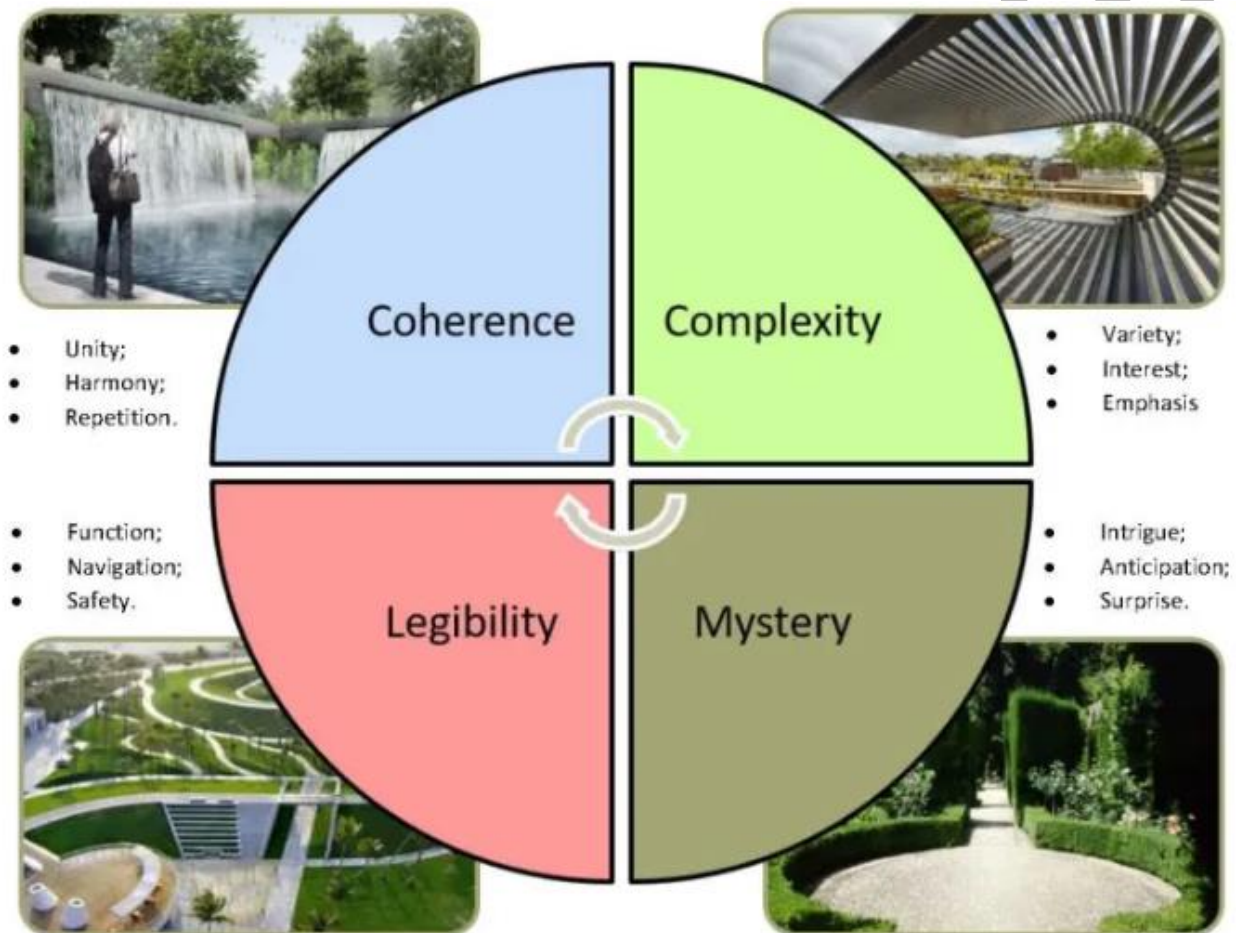
Plate 5.2 A landscape illustrating the preference qualities of coherence, complexity, and mystery



5.2.2 Factors influencing environmental preferences

The environment operates through **natural cycles**, such as the water cycle, carbon cycle, and nutrient cycles. These cycles ensure the continuous renewal of resources and maintain balance in ecosystems. For instance, the water cycle circulates water between land, atmosphere, and oceans, while the carbon cycle regulates greenhouse gases. Disruption of these cycles often leads to environmental challenges such as climate change or soil degradation.

Fill in the blank: Evolutionary factors may explain why humans tend to prefer natural settings with water, open views, and sheltered spots, reflecting ancestral _____ preferences.



Short description: A diagram summarising Kaplan and Kaplan's preference model, showing the four predictors of preference: coherence, complexity, legibility, and mystery, with brief definitions of each.

Figure 5.1 Kaplan and Kaplan's preference model: four predictors of environmental preference

Pilot questions 5.2

21. According to Kaplan and Kaplan, which two cognitive needs drive environmental preferences?



22. What does Ulrich's affective theory propose about initial responses to natural environments?
23. How might evolutionary factors explain a universal preference for natural settings with water?
24. Why do cultural factors introduce variation in environmental preferences across societies?
25. Give one example of how individual factors such as mood or personal history can affect environmental preference.

5.3 Environmental Decision Making

5.3.1 The nature and process of environmental decision making

Environmental decision making refers to the processes through which individuals, groups, and institutions choose among alternative courses of action that have implications for the physical environment and the quality of life of those affected by it. These decisions range from everyday choices about how to use a space to large-scale policy decisions about land use, resource management, and urban development. The process typically involves **problem recognition**, **information gathering**, **evaluation of alternatives**, and **choice and implementation**, though in practice these stages are rarely linear and are often subject to time pressure, incomplete information, and conflicting interests.

Fill in the blank: The process of environmental decision making typically involves problem recognition, information gathering, evaluation of alternatives, and _____ and implementation.

5.3.2 Factors influencing environmental decisions

Environmental decisions are shaped by a range of psychological, social, and structural factors. **Risk perception** influences how individuals assess the severity and likelihood of environmental hazards, often diverging from expert assessments due to cognitive biases such as availability heuristics and optimism bias. **Values and attitudes** toward the environment determine the weight given to ecological considerations in decision contexts. **Social norms** and institutional constraints also shape what options are perceived as available and acceptable, often limiting the range of choices individuals feel able to make even when they hold strong environmental values.

Fill in the blank: The tendency to underestimate risks that affect oneself compared to others, a bias that influences environmental decisions, is known as _____ bias.





Short description: A photograph of a community meeting or public consultation on an environmental planning issue, illustrating collective environmental decision making.
Plate 5.3 A community meeting illustrating collective environmental decision making

Pilot questions 5.3

21. What are the four main stages in the process of environmental decision making?
22. How does risk perception influence environmental decision making?
23. What is meant by optimism bias in the context of environmental risk perception?



24. Give one example of how social norms can limit an individual's environmental choices.
25. Why do individual values and attitudes toward the environment matter for the quality of environmental decisions?

5.4 Environmental Decision Making In Practice

5.4.1 Individual and collective environmental decisions

Environmental decision making operates at both the individual and collective levels. **Individual decisions** include choices about energy use, transport, consumption, and residential location, all of which have cumulative environmental implications. **Collective decisions** involve communities, organisations, and governments making choices about land use, infrastructure, resource management, and environmental standards. Collective decision making is often complex because it must reconcile competing interests, values, and time horizons, and because the consequences of decisions may be unevenly distributed across social groups and generations.

Fill in the blank: Choices about energy use, transport, and consumption that have cumulative environmental consequences are examples of _____ environmental decisions.

5.4.2 Improving environmental decision making

Several strategies can improve the quality of environmental decision making at both individual and collective levels. **Environmental education** enhances understanding of environmental processes and the consequences of human choices, enabling more informed decisions. **Participatory planning** involves communities in decision making about their environments, increasing the relevance and legitimacy of outcomes. **Behavioural interventions**, such as providing timely feedback on energy use or making sustainable options the default choice, can nudge individuals toward more environmentally beneficial decisions without requiring extensive deliberation or the overcoming of deeply held attitudes.

Fill in the blank: The strategy of involving communities in decision making about their environments to increase the relevance and legitimacy of outcomes is known as _____ planning.

Strategy	Description
Environmental Education	Focuses on increasing ecological literacy and awareness. By providing individuals with a scientific understanding of ecosystems, this strategy aims to build long-term values and the skills necessary to evaluate complex environmental data.



Strategy	Description
Participatory Planning	Involves collaborative governance where stakeholders and local communities are included in the design process. This ensures that decisions are socially equitable, transparent, and benefit from "local knowledge," leading to higher public buy-in.
Behavioural Interventions	Utilizes "nudges," social norms, and feedback loops to influence individual actions. Instead of relying on regulation, these interventions make the sustainable choice the default or easiest option (e.g., opt-out renewable energy programs).

Box 5.2 Strategies for improving environmental decision making at individual and collective levels

Short description: Text box listing environmental education, participatory planning, and behavioural interventions as strategies for improving environmental decision making, with brief descriptions of each.

Pilot questions 5.4

21. Give one example each of an individual and a collective environmental decision.
22. Why is collective environmental decision making often more complex than individual decision making?
23. How does environmental education improve the quality of environmental decision making?
24. How do behavioural interventions such as default settings support more sustainable environmental choices?
25. Why is participatory planning considered important for the legitimacy of environmental decisions?

Series Summary

This concluding Series has examined environmental quality, preferences, and decision making as the evaluative and practical dimensions of human-environment relationships. We began by defining environmental quality across its physical, functional, and social dimensions, and considered how space perception shapes experience and well-being. We then explored the main theories of environmental preference, including Kaplan and Kaplan's preference model and Ulrich's affective theory, and examined the evolutionary, cultural, and individual factors that



produce variation in preferences. Following that, we considered the nature and process of environmental decision making and the psychological, social, and structural factors that influence it. Finally, we examined how decisions are made at individual and collective levels and what strategies can improve their quality and sustainability.

By working through this Series, you should now be able to define environmental quality and explain how spatial qualities are perceived, describe the main theories and factors shaping environmental preferences, explain the nature and process of environmental decision making and identify the factors that influence it, distinguish between individual and collective decisions, and assess strategies for improving decision making. These abilities align with the Series Learning Outcomes (SLOs) and bring together the insights of the entire course into a coherent understanding of how people evaluate, prefer, and make decisions about their environments.

Glossary of Terms

- **Behavioural intervention:** A strategy that alters the decision environment to encourage more sustainable or beneficial choices, such as making a sustainable option the default or providing timely feedback on behaviour.
- **Environmental decision making:** The processes through which individuals, groups, and institutions choose among alternative courses of action with implications for the physical environment and quality of life.
- **Environmental preference:** The evaluative response through which individuals favour certain environments over others, shaped by cognitive, emotional, evolutionary, cultural, and personal factors.
- **Environmental quality:** The degree to which a physical setting meets human needs and expectations across physical, functional, and social dimensions.
- **Kaplan and Kaplan's preference model:** A theoretical model proposing that environmental preferences are driven by the cognitive needs to understand and explore, and are predicted by the qualities of coherence, complexity, legibility, and mystery.
- **Participatory planning:** An approach to environmental decision making that involves communities and stakeholders in deliberative processes, increasing the relevance and legitimacy of outcomes.
- **Risk perception:** The subjective assessment of the severity and likelihood of environmental hazards, which often diverges from expert assessments due to cognitive biases.
- **Space perception:** The way individuals experience and evaluate the spatial properties of their environment, including scale, enclosure, openness, and proportions.
- **Spatial quality:** The perceptual and experiential attributes of a space, including its scale, proportions, light, and acoustic conditions, which influence psychological comfort and well-being.



- **Ulrich's affective theory:** A theory proposing that initial aesthetic and emotional responses to environments are rapid and automatic, with natural environments typically generating more positive responses than built ones, particularly following stress.

Concept Check Questions 5

Objective Questions

21. Define environmental quality and name its three dimensions. (Linked to SLO 5.1)
22. Name the four predictors of environmental preference in Kaplan and Kaplan's model. (Linked to SLO 5.2)
23. What are the four stages in the process of environmental decision making? (Linked to SLO 5.3)
24. Distinguish between individual and collective environmental decisions by giving one example of each. (Linked to SLO 5.4)
25. Name two strategies that can improve the quality of environmental decision making. (Linked to SLO 5.5)

Short-Answer Questions

6. Explain how space perception influences the psychological experience of a physical setting, giving one example. (Linked to SLO 5.1)
7. Describe the key difference between Kaplan and Kaplan's preference model and Ulrich's affective theory. (Linked to SLO 5.2)
8. How do social norms and institutional constraints limit the range of environmental choices available to individuals? (Linked to SLO 5.3)

Long-Answer Questions

9. Analyse how evolutionary, cultural, and individual factors combine to shape environmental preferences, and discuss the implications for the design of public spaces that must serve diverse communities. (Linked to SLO 5.2)
10. Evaluate the challenges facing environmental decision making at both individual and collective levels and assess the extent to which environmental education, participatory planning, and behavioural interventions can address these challenges. (Linked to SLO 5.4 and SLO 5.5)

Answers to Concept Check Questions 5

Objective Questions

21. Environmental quality is the degree to which a setting meets human needs and expectations. Its three dimensions are physical quality, functional quality, and social quality.
22. Coherence, complexity, legibility, and mystery.



23. Problem recognition, information gathering, evaluation of alternatives, and choice and implementation.
24. Individual: choosing to use public transport rather than a private vehicle. Collective: a local government deciding to designate land as a protected green space.
25. Environmental education and participatory planning, or behavioural interventions such as default settings.

Short-Answer Questions

6. Spatial properties such as ceiling height, openness, and natural light shape emotional responses to a space. For example, a high-ceilinged, naturally lit room may generate feelings of spaciousness and calm, while a low-ceilinged, artificially lit space may feel confining and increase discomfort.
7. Kaplan and Kaplan's model is primarily cognitive, proposing that preferences are driven by the need to understand and explore environments, while Ulrich's affective theory emphasises rapid, automatic emotional responses that precede cognitive evaluation and are particularly associated with natural versus built environments.
8. Social norms define what behaviours are considered acceptable within a community, and individuals who deviate from these norms may face social disapproval. Institutional constraints such as cost, infrastructure, and availability further restrict the options people can realistically choose, even when they are environmentally motivated.

Long-Answer Questions

9. **Basic response:** Evolutionary factors explain broad shared preferences for natural settings. Cultural factors introduce variation in how landscape types and architectural styles are valued. Individual factors such as mood and personal history create further variation in the moment. Together these layers produce a complex mosaic of preferences across communities.

Value-added response: Designing for diverse communities requires acknowledging that no single set of environmental qualities will satisfy all users equally. Incorporating flexible spaces, diverse landscape elements, and participatory design processes that allow different communities to articulate their preferences can produce public spaces that are more inclusive and better used across cultural and individual boundaries.

14. **Basic response:** Individual decisions are hindered by cognitive biases and limited information. Collective decisions face competing interests and unequal power.

Education, participatory planning, and behavioural interventions each address different dimensions of these challenges and can complement each other when used together.

Value-added response: No single strategy is sufficient on its own. Education builds the knowledge base for informed decisions but does not automatically change behaviour. Participatory planning improves legitimacy but can be slow and costly. Behavioural interventions are efficient but may not build lasting values. The most effective approaches combine all three, addressing knowledge, voice, and choice architecture simultaneously to shift both individual habits and collective outcomes.



Answers to Pilot Questions 5

Part 5.1

21. Physical quality, functional quality, or social quality.
22. The degree to which a setting supports positive social interaction, a sense of community, and safety for its users.
23. Higher ceilings are associated with feelings of freedom and openness, while low ceilings can feel confining and increase discomfort or cognitive narrowing.
24. Coherence, complexity, legibility, and mystery.
25. Because measurable indicators capture objective conditions but cannot fully account for how users perceive and experience a setting, which is equally important for understanding its impact on well-being.

Part 5.2

21. The need to understand the environment and the need to explore it.
22. That initial responses to natural environments are rapid, automatic, and emotional, and are typically more positive than responses to built environments, particularly after stress.
23. Environmental education and participatory planning, or behavioural interventions such as default settings.
24. Because different cultures attach different meanings, aesthetic values, and social significance to landscape types, architectural styles, and spatial arrangements, producing genuine differences in what is considered attractive or appropriate.
25. A person in a negative mood may find even a familiar and normally preferred setting unappealing, while someone with a positive childhood memory associated with a place type may show stronger preference for it than others with no such association.

Part 5.3

21. Problem recognition, information gathering, evaluation of alternatives, and choice and implementation.
22. It shapes how people assess the severity and likelihood of hazards, often leading to underestimation of risks they feel personally distant from, which can result in insufficient precautionary action.
23. Optimism bias is the tendency to believe that negative environmental outcomes are less likely to affect oneself than others, reducing motivation to take protective action.
24. In communities where car use is the social norm, an individual wishing to cycle may face social pressure or practical barriers such as lack of cycle infrastructure that make the pro-environmental choice difficult to sustain.



25. Because values and attitudes determine the weight given to environmental outcomes when comparing alternatives, individuals with stronger pro-environmental values are more likely to factor ecological consequences into their choices and to seek out information about environmental impacts.

Part 5.4

21. Individual: choosing to reduce household energy consumption. Collective: a city authority deciding to invest in public transport infrastructure.
22. Because it must reconcile competing interests and values among many stakeholders, account for consequences distributed unevenly across social groups and future generations, and operate within complex political and institutional constraints.
23. Environmental education and participatory planning, or behavioural interventions such as default settings.
24. By making the environmentally beneficial option the easiest or default choice, they reduce the effort required to act sustainably and work with rather than against cognitive tendencies such as inertia and status quo bias.
25. Because involving community members in decisions about their environments increases the chance that outcomes reflect local needs and values, and builds public trust and commitment to implementing the decisions made.

References and Attributions 5

Illustrations

- *Plate 5.1 Contrasting spatial qualities and their effects on psychological experience:* AI-generated using the prompt “Generate a side-by-side photograph showing a spacious, naturally lit room alongside a cramped, poorly lit interior to illustrate how spatial quality influences psychological comfort and well-being.” Suggested OER search string: “open educational resource image spatial quality indoor space comfort cramped spacious.”
- *Plate 5.2 A landscape illustrating the preference qualities of coherence, complexity, and mystery:* AI-generated using the prompt “Generate a photograph of a natural landscape with trees, a winding path disappearing from view, and a coherent yet visually rich setting to illustrate Kaplan and Kaplan's preference model.” Suggested OER search string: “open educational resource image natural landscape coherence complexity mystery preference.”
- *Figure 5.1 Kaplan and Kaplan's preference model: four predictors of environmental preference:* AI-generated using the prompt “Create a labelled diagram summarising Kaplan and Kaplan's preference model showing coherence, complexity, legibility, and



mystery as four predictors of environmental preference, with a brief definition of each.” Suggested OER search string: “open educational resource diagram Kaplan preference model coherence complexity legibility mystery.”

- *Plate 5.3 A community meeting illustrating collective environmental decision making:* AI-generated using the prompt “Generate a photograph of a diverse group of community members participating in a public consultation meeting about an environmental planning issue, illustrating collective environmental decision making.” Suggested OER search string: “open educational resource image community meeting public consultation environmental planning decision making.”
- *Box 5.2 Strategies for improving environmental decision making at individual and collective levels:* AI-generated using the prompt “Generate a simple text box listing three strategies for improving environmental decision making: environmental education, participatory planning, and behavioural interventions, with a brief description of each.” Suggested OER search string: “open educational resource text box strategies environmental decision making education participatory planning behavioural interventions.”

General References

21. Kaplan, S., and Kaplan, R. (1989). *The experience of nature: A psychological perspective*. Cambridge University Press.
22. Ulrich, R. S. (1983). Aesthetic and affective response to natural environment. In I. Altman and J. F. Wohlwill (Eds.), *Behavior and the natural environment* (pp. 85-125). Plenum Press.
23. Gifford, R. (2007). *Environmental psychology: Principles and practice* (4th ed.). Optimal Books.
24. Bell, P. A., Greene, T. C., Fisher, J. D., and Baum, A. (2001). *Environmental psychology* (5th ed.). Lawrence Erlbaum Associates.
25. Stokols, D., and Altman, I. (Eds.). (1987). *Handbook of environmental psychology* (Vols. 1 and 2). Wiley.

