Environmental Systems and Societies

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Contents

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How to use this book

The following features will help you consolidate and develop your understanding of ESS, through concept-based learning.

Key terms
◆ Definitions appear throughout the margins to provide context and help you understand the language of ESS. There is also a glossary of all key terms at the end of the book.

● **Common mistake**

To help students to avoid falling into regular misunderstandings.

● **TOK**

Links to Theory of Knowledge (TOK) allow you to develop critical thinking skills and deepen understanding by bringing discussions about the subject beyond the scope of the content of the curriculum.

Link
This feature allows links to be made between different parts of the course, framed using levels of organization and concepts, helping students to form a holistic appreciation of material in the syllabus. Because of the interdisciplinary nature, some context may be required.

SYLLABUS CONTENT
▶ This coursebook follows the exact order of the contents of the IB ESS Diploma syllabus.
▶ Syllabus understandings are introduced naturally throughout each topic.

Guiding questions

The key prompts from the ESS Guide to help the students view the content through the required conceptual lenses.

ATL ACTIVITY

Approaches to learning (ATL), including learning through inquiry, are integral to IB pedagogy. These ATL skills activities get you to think about real-world situations.

Concepts

Highlighting the links to the three themes that underpin the ESS for the IB Diploma course (perspectives, systems, and sustainability)

REAL-WORLD EXAMPLE

An opportunity to apply the topic/concept explored.

● **Review activity**

● An activity to deepen understanding of the topic.

REVIEW QUESTIONS

■ Formative questions to provide students with the opportunity to test their knowledge.

EXAM PRACTICE QUESTIONS

a Prepare students for assessment with questions designed to test understanding and knowledge in the format of the exam.. *[2 marks]*

● **HL lenses**

Feature to cover and link the main content to the HL extension lenses (HL.a, HL.b and HL.c) within the content.

HL only

Material that is designated as higher level, at the end of relevant chapters.

Chapter summary

At the end of each chapter, there is a summary of the key points addressed to help you develop and understand the depth of knowledge you need to acquire for the course.

Skills are highlighted with this icon. Students are expected to be able to show these skills in the examination, so we have explicitly pointed these out when they are mentioned in the Guide.

International mindedness is indicated with this icon. It explores how the exchange of information and ideas across national boundaries has been essential to the progress of science and illustrates the international aspects of physics.

The IB learner profile icon indicates material that is particularly useful to help you towards developing the following attributes: to be inquirers, knowledgeable, thinkers, communicators, principled, open-minded, caring, risk-takers, balanced and reflective. When you see the icon, think about what learner profile attribute you might be demonstrating – it could be more than one.

Environmental Systems and Societies

1.1 Perspectives

Guiding questions

- How do different perspectives develop?
- How do perspectives affect the decisions we make concerning environmental issues?

SYLLABUS CONTENT

This chapter covers the following syllabus content:

▶ 1.1.1   A perspective is how a particular situation is viewed and understood by an individual. It is based on a mix of personal and collective assumptions, values and beliefs.

▶ 1.1.2.   Perspectives are informed and justified by sociocultural norms, scientific understandings, laws, religion, economic conditions, local and global events, and lived experience among other factors.

▶ 1.1.3   Values are qualities or principles that people feel have worth and importance in life.

▶ 1.1.4   The values that underpin our perspectives can be seen in our communication and actions with the wider community. The values held by organizations can be seen through advertisements, media, policies and actions.

▶ 1.1.5   Values surveys can be used to investigate the perspectives shown by a particular social group towards environmental issues.

▶ 1.1.6   Worldviews are the lenses shared by groups of people through which they perceive, make sense of, and act within their environment. They shape people's values and perspectives through culture, philosophy, ideology, religion and politics.

▶ 1.1.7   An environmental value system is a model that shows the inputs affecting our perspectives and the outputs resulting from our perspectives.

▶ 1.1.8   Environmental perspectives (worldviews) can be classified into the broad categories of technocentric, anthropocentric and ecocentric.

▶ 1.1.9   Perspectives and the beliefs that underpin them change over time in all societies. This can be influenced by government or NGO campaigns or through social and demographic change.

▶ 1.1.10   The development of the environmental movement has been influenced by individuals, literature, the media, major environmental disasters, international agreements, new technologies and scientific discoveries

Note: There is no additional higher level content in 1.1.

Exploring Perspectives: shaping values and worldviews

Concepts

According to the Britannica dictionary, perspective means 'a way of thinking, a unique and personal way of understanding and interpreting a particular situation'. To define it further, we need to view issues from a different point of view which emerges from a wide range of factors and different circumstances: life experiences, **personal assumptions**, **scientific understanding**, **economic status**, **ethical beliefs**, and **personal values**.

People should reflect on their own perspectives while acquiring in-depth knowledge on a particular issue. One relevant example is the issue of rising sea levels and its impact on several countries' future existence.

REAL-WORLD EXAMPLE

The Maldives is an archipelago located in the Indian Ocean, and it faces unique environmental and social challenges due to its geographical characteristics. In the Maldives, rising sea levels pose a significant threat to the country's very existence. The Maldives is known for its low-lying islands, with the highest point only a few meters above sea level. As global sea levels rise due to climate change, the Maldives becomes increasingly vulnerable to coastal erosion, flooding, and saltwater intrusion into freshwater sources.

People from the Maldives, especially those living in the coastal areas, have a unique perspective on climate change and its consequences. They witness the immediate effects of sea-level rise on their livelihoods, land, and homes. Their perspective is rooted in the fear of losing their homes and way of life due to the encroaching ocean. On the other hand, people from regions less affected by rising sea levels may have a different perspective. While they may also be concerned about climate change's overall impact, they might not fully grasp the urgency and personal implications that the Maldivians are facing. The severity of the issue might not resonate as deeply, as it doesn't directly threaten their immediate surroundings.

■ **Figure x.** The Maldives is an archipelago located in the Indian Ocean

◆ **Personal assumptions** are made up of our beliefs and preconceptions which are based on our previous experiences as well as our cultural background, and the education we have been provided. For instance, someone who has grown up in a rural area may have a different perspective on the importance of protecting natural resources, or how necessary it is to drive a car, than someone who has grown up in an urban area.

◆ **Scientific understanding** is another factor to determine our perspectives which includes our knowledge and understanding of scientific concepts and principles, as well as the knowledge of natural world, social and physical sciences. For example, if a student has a strong understanding of ecology then they may have a different perspective on how the human activities impact the environment than a student with a limited knowledge in this area.

◆ **Economic conditions** refers to one's income and occupation. For example, an individual with a high income may have a different perspective on the importance of economic growth than someone with a low income.

◆ **Ethical beliefs** refers to moral principles and values that an individual holds. For example, a person with strong religious beliefs may have a different perspective on the morality of certain actions than someone without strong religious beliefs.

◆ **Personal values** can include beliefs about the importance of family, community, and personal responsibility. For example, an individual with a strong sense of community may have a different perspective on the importance of protecting the environment than someone who places a higher emphasis on individual rights.

◆ **Perspective** point of view, a particular way of seeing or considering something.

◆ **Experiential knowledge** means something that is based on experience.

◆ **Innate knowledge** something someone is born with.

◆ **A priori knowledge** means purely by reasoning rather than by observation.

◆ **Pragmatism** relates to utility and practicality.

Perspectives are informed and justified by many different factors

Arguments are statements that we make to support our individual perspectives or to produce a counterargument. Perspectives may be shaped by various factors within a range from personal assumptions and our scientific understanding to economic status, ethical beliefs, and personal values. Understanding the arguments that support a viewpoint can assist us in critically evaluating various viewpoints and developing our own informed viewpoint and conclusions.

The more we learn and the deeper our understanding, the more our opinions develop and thus our perspectives widened. Sometimes, our personal perspective can help us to empathise with others. At other times, it can prevent us from understanding their position, or even wanting to. However, our perspectives and individual knowledge develop our life experiences. Our perspectives are shaped by some factors, including our own personal assumptions, scientific understandings, **economic conditions**, ethical beliefs, and personal values. Then we try to justify our positions using arguments based on ethics, logic, religion, politics, or **pragmatism**.

One of the numerous benefits of supporting diversity in all parts of society is that it allows everyone to meet, respect, and learn from people who have different views, experiences, and viewpoints.

As another point of view, cultural relativism may help us to become more respectful to different cultural and religious perspectives since it supports the idea that all cultural perspectives are equally valuable and valid. To relativism, we also know that no one set of cultural values is better than another.

Given that people all come from different communities and have had varied life experiences, we should become more confident in what we know if we want to improve our knowledge and comprehension in order to develop stronger arguments. We must also become more conscious of

our own prejudices, assumptions, and perspectives, which are influenced by where and when we live, the communities we belong to, and even the language we use. Cross-checking the knowledge claims will undoubtedly help us obtain actual information and hence grow more confident in our own understanding.

Ethics refers to moral principles and ideals. Ethical debates may centre on the morality of a certain action or choice. For example, an ethical principle which says that all living things have a right to exist would require an argument that deforestation is wrong.

Another argument that says renewable energy is a better option than burning fossil fuels would be based on the logic that renewable energy is a more sustainable option.

Arguments that are made with use of critical thinking would focus on the logical consequences of particular actions or decisions. An argument based on religion would focus on the spiritual ramifications of a particular action or choice. For example, a religious conviction that all living things have a soul may underpin an argument that animals should not be exploited for food.

Pragmatism relates to utility and practicality. Furthermore, pragmatist arguments would focus on the practical repercussions and usefulness of a specific activity. An argument for recycling, for example, could be based on the pragmatic conclusion that recycling conserves resources and decreases waste.

Values are qualities or principles that people feel have worth and importance in life

Moral, personal, and societal values are the three types of values. Our values are influenced by our cultural background, religion, family, education, and experiences. Values are significant in this sense because they shape how people perceive the world around them. Values can guide us to make our own decisions to take actions that align with our values, regardless of the external circumstances. For example, someone who values environmental conservation may choose to recycle or purchase a hybrid car despite the fact that it is more expensive.

Values are qualities and ideas that we feel are important in our lives and that might influence how we interact with one another in the community. Individuals who share similar ideals are more likely to form strong bonds. This also encourages collaboration toward a common goal.

Furthermore, values might influence one's perspective and choices. A person who values sustainability, for example, may have a different perspective on government rules and policies than someone who values economic growth.

Everyone should be conscious of their own values and how they influence their perceptions, behaviors, and decisions. It is equally critical that we understand and appreciate the values of others, even if they differ from our own, in order to build a diverse and globalized society based on effective communication, understanding, and respect.

For instance, in the context of environmental ethics and conservation, **intrinsic value** is often associated with the inherent worth of the natural world and its components, such as ecosystems, species, or individual organisms. It suggests that these entities have value and deserve moral consideration simply because they exist and have their own inherent characteristics, rights, or dignity.

The recognition of intrinsic value in nature has implications for environmental ethics and conservation practices. It implies that nature should be protected not solely for its instrumental value to humans but also acknowledging the ethical responsibility to preserve it for its own sake. This perspective underpins conservation efforts aimed at preserving biodiversity, ecosystems, and ecological integrity.

The values that underpin our perspectives can be seen in our communication and actions with the wider community. The values held by organizations can be seen through advertisements, media, policies and actions.

In our interconnected world, our values shape not only our individual perspectives but also our communication and actions within the wider community. Moreover, organizations play a significant role in society, and their values can be observed through various channels such as advertisements, media representations, policies, and actions. Understanding the underlying values behind our perspectives and those held by organizations is important for navigating the complexities of environmental issues and sustainability.

Values are deeply rooted beliefs that guide our thoughts, decisions, and behaviours. They form the foundation of our perspectives on environmental, social, and ethical issues. By examining our values, we can gain insight into why we communicate and act in particular ways within the wider community. For instance, by examining our values of equality and justice, our communication and actions may prioritize inclusivity and fairness in addressing environmental challenges. If we value collaboration and empathy, we may engage in open and respectful dialogue, seeking common ground for collective environmental solutions. Alternatively, if we value competition and self-interest, our communication may be more confrontational or centered on personal gain.

In addition to this, our actions often speak louder than words and reveal our true values. Whether it's participating in environmental protests, volunteering for conservation initiatives, or making sustainable choices in our daily lives, our actions reflect our commitment to certain values. By observing the actions of individuals, we can gain insights into their environmental consciousness and priorities.

Organizations convey their values through advertisements and media representations. Advertisements, whether in print, television, or online, reflect the values that companies wish to associate with their products or services. For example, an advertisement promoting a sustainable lifestyle may signal an organization's commitment to environmental responsibility. Similarly, media representations of organizations can shed light on their values by highlighting their environmental initiatives, ethical practices, or community engagement. Organizational values are often embedded in their policies and guidelines. By examining these documents, we can gain an understanding of an organization's stated priorities and principles. For instance, an organization with a strong commitment to sustainability may have policies promoting waste reduction, renewable energy use, or ethical sourcing practices. Policies can provide insights into how organizations translate their values into tangible actions.

● HL.a.12: Legal and Economic Strategies for Sustainability

Achieving sustainability involves both legal and economic approaches. For instance, laws imposing fines for illegal dumping align with ethical concerns for responsible resource use. Simultaneously, economic strategies attach value to ecosystem services, connecting ethical considerations with economic incentives for sustainable practices.

Like individuals, however, organizations are judged by their actions. Whether it's implementing sustainable practices, engaging in community outreach, or supporting environmental causes,

an organization's actions reflect its values. For instance, a company that actively supports environmental conservation through donations or partnerships demonstrates a commitment to environmental stewardship. By analyzing the actions of organizations, we can evaluate the alignment between their stated values and their real-world impact.

It is crucial to highlight that conflict between individuals and organizations is frequently caused by differences in values. For example, an individual who values environmental conservation may disagree with an organization that promotes economic growth, resulting in tensions and disputes.

Values surveys for investigating perspectives towards environmental issues

You should be familiar with how to carry out surveys of a particular social group to identify perspectives toward a particular environmental issue, and evaluate how these values are likely to impact the issue. Values surveys are a tool for investigating the perspectives of a specific social group. These surveys seek to identify the values and beliefs that shape a group's perspectives on a specific environmental issue.

A values survey normally begins with the selection of a specific social group. Then a set of survey questions probing into that particularly chosen group's values and beliefs are developed, and finally the collection and analysis of data takes place. The survey questions are designed to collect information about how the group views the current environmental issue, as well as what factors impact their opinion.

A values survey on a specific environmental issue, such as deforestation, could help to obtain data on the group's beliefs toward the necessity of safeguarding natural resources, the moral consequences of clear-cutting forests, and the economic rewards of logging.

After collecting the survey data, this can be analyzed to identify patterns and trends in the group's perspectives. This can provide insight into how the group's values and beliefs are likely to impact the environmental issue at hand.

For example, a fierce debate in people's minds in the United States which has alternated a lot back and forth over the last few decades is between prioritizing the environment (even at the cost of slowing economic growth) or the economy (even if the environment suffers). According to Gallup survey data, in the 1980s and 1990s, the environment was the obvious winner in this moral quandary when seen nationally. This, however, began to alter as the new millennium began.

The conflict between the two intensified in the United States as the impacts of the 2008 financial crisis began to bite. In March 2009, the economy had moved to the forefront of most people's attention, with a majority (51%) choosing the economy as a priority over the environment (42%). Between 2015 and 2019, the Earth regained control of American hearts and minds, but the Covid-19 pandemic appears to have altered the balance once more in 2020 and 2021.

Survey results could show that the majority of the group prioritizes economic growth over environmental protection, implying that they are less likely to support conservation efforts to protect environment. You should be familiar with the process of conducting values surveys to identify perspectives on environmental issues.

Tool 2 Technology

You need to use a tool such as Google Forms/Survey Monkey or other polling functions on social media etc to collect data and then choose an appropriate software for data analysis.

Create and administer surveys

For carrying out surveys, you should be able to:

- identify and justify your choice of an appropriate target audience
- construct relevant open or closed questions with multiple-choice responses/Likert scale, as appropriate
- choose and justify an appropriate method and size of sample, i.e. random/convenience/volunteer/purposive
- show ethical awareness, i.e. anonymity/consent of respondents over the age of 12
- pilot/trial the survey to gain feedback for modification.

This will assist you in comprehending the perspectives of various social groups and determining how these values are likely to impact specific environmental issues.

To help you understand the process, here's a step-by-step guide to follow:

1 Define the purpose of your research: What particular information would you like to obtain? (Remember that your purpose should also align with the topics and concepts covered in ESS coursebook.)
2 Create a well-structured survey: Your questions must be written as clear and concise as possible. Make sure that your questions are not biased. Avoid leading or loaded questions and cover all relevant aspects of the topic of your concern.
3 Determine the specific group of participants: One factor you should consider is the demographic information such as age and gender depending on the purpose of your research. Make sure that your sample size is appropriate to obtain desired results.
4 Administer the survey: Decide how you can distribute the survey in a most suitable way. It could be an online platform such as Google Forms/Survey Monkey/social media as well as paper-based questionnaires, or face-to-face interviews. Provide clear instructions for respondents, maintain confidentiality if required, and encourage honest and thoughtful responses.
5 Record and organize data: Data must be collected and recorded in a systematic way. If you are using an online platform, you may collect the data automatically to a spreadsheet. If you are using paper-based surveys or interviews, you will need to enter the participants' responses into a spreadsheet or data analysis software manually.
6 Analyze the data: Once your data collection is completed, you need to apply correct data analysis methods to draw meaningful conclusions from your survey. Data analysis may include both qualitative analysis (coding and thematic analysis of open-ended responses) and quantitative analysis (statistical measures, such as percentages, averages, correlations, etc.). For analysis, you may use Microsoft Excel, SPSS, or other online statistical analysis tools.
7 Interpret data: Examine patterns, trends, and relationships within the data. Look for significant findings and connections to your research purpose. You may consider comparing different subgroups or demographic categories to gain a deeper understanding of your survey results.

8 Present your findings: Clearly summarize your findings by using appropriate tables, graphs, charts, and written explanations. Decide the most effective way to communicate your findings to your intended audience. It can be through a report, presentation, or visual display.

9 Reflect and Discuss: Reflect on three limitations of your survey. Consider the extent to which the sample or their responses may be biased. Consider the context of relevant theories, concepts and real-world applications while discussing the implications of your findings. Consider the ethical considerations involved in conducting and reporting survey research.

Remember to follow ethical guidelines and obtain any necessary approvals or consent before administering any surveys such as this with human subjects. Additionally, consult your DP ESS teacher or supervisor for specific guidance and requirements related to survey design and data analysis for your coursework or assessments.

Worldviews shape people's values and perspectives

● Common mistake

Not acknowledging/realising that the development of the internet and social media, one's perspective can be influenced by a far greater variety of worldviews than just that of the local community. Consequently, models that attempt to classify perspectives, though helpful, are invariably inaccurate as individuals often have a complex mix of positions.

Worldviews are broad and comprehensive frameworks which shape people's perceptions and understandings of their surroundings as well as their actions. They can also be considered as people's 'lenses' on the world which are shaped by cultural, philosophical, ideological, religious, and political factors that people use while making sense of the world. Therefore, people's worldviews influence the way people perceive the world and their place in it by shaping their values and perspectives.

A worldview is a set of beliefs, values, and assumptions that impact a person's vision of reality and behaviours. A person with a religious worldview, for example, may believe that the natural world was created by a higher power and, as a result, prioritize environmental conservation based on their religious views.

The interactions of individuals with others are also influenced by their worldviews. People that share similar worldviews have a stronger bond and sense of community with one another. They are also more likely to work together to achieve a common goal.

Because of the advancements of the internet and social media, one's perspective can be impacted by far greater spectrum of worldviews than just that of one's immediate neighbourhood. As a result, while models that attempt to categorize perspectives are
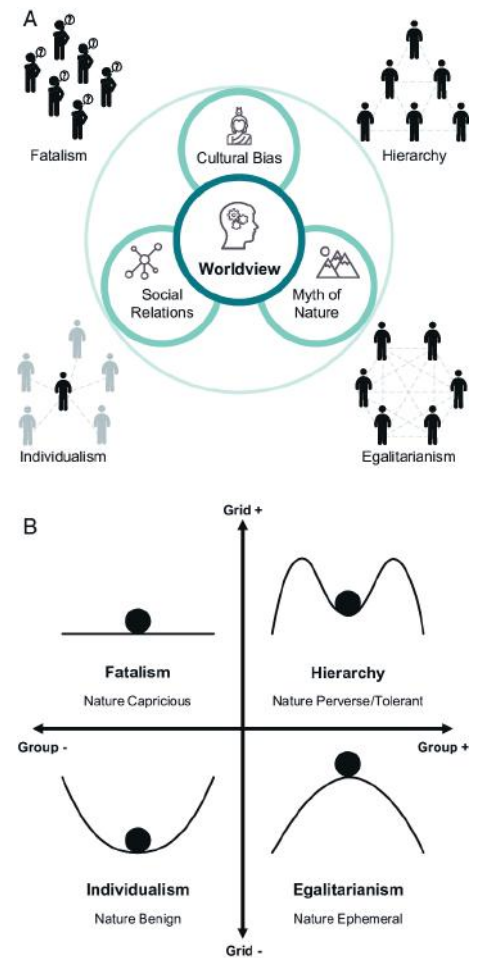
■ **Figure 1.XX** Worldview can be shaped [a] by cultural, philosophical, ideological, religious and political factors

valuable, they are almost always wrong since people usually have a complicated mix of positions. A person's perspective and actions, for example, may be shaped differently if they have a combination of religious, environmental, and economic worldviews. This point of view will assists people in effectively navigating and communicating in a diverse and globalized society.

Environmental Value System

A model for understanding the factors that influence our various perspectives on environmental issues is an environmental value system. It proposes that various inputs, such as media information, education, and worldviews, shape an individual's value system, which leads to a variety of outputs, including judgments, opinions, and actions.

According to the environmental value system model, an individual's perceptions and understanding of environmental issues are shaped by the inputs they receive from various sources such as the media, education, and worldviews. These inputs are then processed by an individual's personal value system, which is comprised of the individual's beliefs, values, and assumptions. This process results in outputs like judgments, opinions, and actions that are influenced by the individual's value system.

For example, a person who learns about deforestation from a news source that emphasizes the economic benefits of logging may form an opinion that prioritizes economic growth over environmental protection.

Input	Perspective	Output
"Loggers make a significant contribution to the state's economy as they purchase supplies from local businesses." http://economic-impact-of-ag.com/NH/2014NH_Economic_Contribution_of_the_Logging_Industry_in_New_Hampshire_2012-18z3bzi.pdf	Logging as a mean to sustain economic growth	may form an opinion that prioritizes economic growth over environmental protection
"The Solomon Islands in the South Pacific are under threat from illegal and unsustainable logging which is destroying its biodiverse rainforests at an alarming rate." https://www.globalwitness.org/en/campaigns/forests/paradise-lost/	Deforestation as a threat to biodiversity	may develop a viewpoint that prioritizes environmental protection over economic growth

Individuals who receive information about deforestation from a news source as in the one from twitter that emphasizes the environmental consequences of logging, on the other hand, may develop a viewpoint that prioritizes environmental protection over economic growth.

● Review activity

● Design your own Environmental Value System model on the issue of deforestation using the table below as a template.

| Input	Perspective	Output
List some of the sources that shaped your perspective	Sate your perspective on the issue of deforestation	List the actions you would take.

Classification of Environmental Perspectives

■ Introduction to technocentric, anthropocentric, and ecocentric perspectives

There are many ways to classify our perspectives, and that these models are a useful, but imperfect as individuals often have a complex range of positions. Technocentrism assumes all environmental issues can be resolved through technology and there can be unlimited economic growth in the cornucopian view. Anthropocentrism views humankind as being the central, most important element of existence, it splits into a wide variety of views. Ecocentrism sees the natural world as having preeminent importance and intrinsic value. It favours small scale, low-technology lifestyles with restraint in the use of all natural resources.

● HL.a.1: Legal Personhood to Natural Entities

Extending legal personhood to natural entities, like granting legal rights to rivers, demonstrates a deepening ethical commitment to environmental protection. This aligns with ecocentric perspectives, where nature holds intrinsic value. Such legal recognition strengthens environmental safeguards beyond anthropocentric viewpoints.
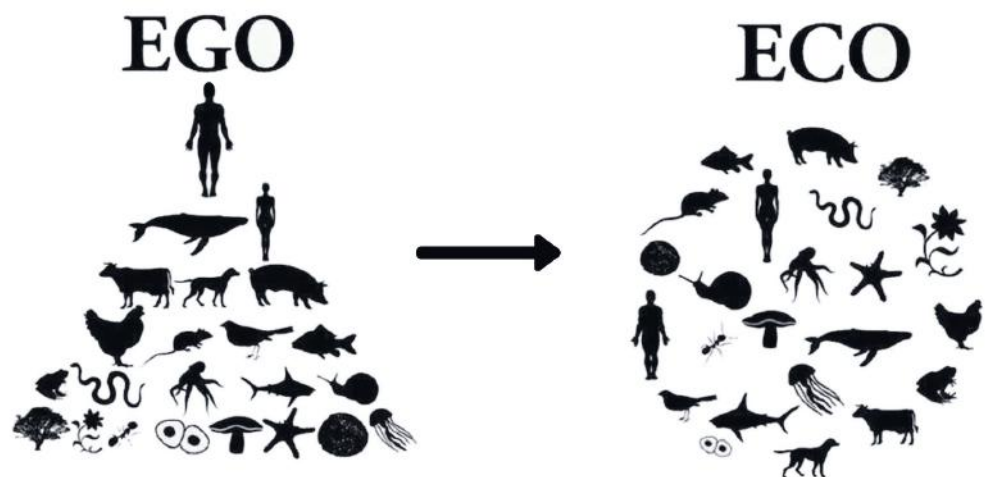
■ **Figure 1.XX** The way people perceive human beings in relation to nature can change.

Environmental perspectives' characteristics, values and priorities are discussed below with examples and real-world implications.

Ecocentrism

Ecocentrism (values centered on ecology) and technocentrism (values centered on technology) are two competing viewpoints on human technology's potential to impact, regulate, and even preserve the environment. Ecocentrics, particularly "deep green" ecologists, regard themselves as subject to nature rather than in command of it. They have lost faith in contemporary technology and the bureaucracy that comes with it. Ecocentrics will argue that nature should be respected for its processes and products, and that low-impact technology and self-reliance are preferable to technological domination of nature.

Technocentrism

Technocentrics, particularly imperialists, have unwavering faith in technology and industry, and they believe that people have complete control over nature. Although technocentrics acknowledge

the existence of environmental concerns, they do not regard them as problems that can be remedied by reducing industry. Rather, environmental issues are viewed as scientific problems to be solved. Indeed, technocentrics believe that scientific and technical growth is the way forward for both rich and developing countries, as well as the solution to our current environmental concerns.

Conservationist ideas, as well as technology's ability to safeguard nature, should ensure that today's level of life is preserved in the future, but not at the expense of environmental damage.

There is no doubting that each of these perspectives, in addition to the more traditional environmental perspectives, has merits that must be considered while looking for answers to environmental challenges. The task for society is to reach a consensus of viewpoints through a global debate on what is best not only for humans, but also for the rest of nature.

Anthropocentrism

Anthropocentrism literally means "being human-centered" but in its most important philosophical form, it is the ethical view that only humans have intrinsic value. In contrast, all other beings are only valuable because of their potential to serve humans, or because of their instrumental worth.

In some ways, all ethics is anthropocentric, because only humans have the cognitive ability to formulate and perceive moral value. This agency positions humans at the center of any ethical system we develop, leading some researchers to argue that anthropocentrism is the only logical ethical system available to us. Many other researchers, however, contend that this situation is an ethically uninteresting truth, rather than a limiting element in the type of ethical system we construct to help us discern what is good and evil, right and wrong. We can recognize our human lens' limitations while yet making decisions about where we find value in the world.

Because we are moral agents, the same cognitive faculty that allows us to see the world in comparison to ourselves also allows us to treat or value other things with respect or as goals in themselves. **Ontological anthropocentrism** is the concept of a human-centered universe in which human cognition affects our ethical approach. **Ethical anthropocentrism** is another form of anthropocentrism that sees humans as the exclusive possessors of inherent value. But not all ethical anthropocentrism is created equal. From this vantage point, one can either view humans in isolation and dismiss nonhuman relationships as unimportant for decision making, which we will refer to as narrow anthropocentrism, or one can understand humans in an ecological context, as embedded in and dependent on a plethora of relationships with other beings and systems, which we will refer to as **enlightened, or broad anthropocentrism**.

Environmental ethics discussions frequently center on ethical anthropocentrism, which attempts to analyze our valuing of the natural world in order to decide how we should act in relation to that world. What do we value in nature (and how do we define nature), why do we value it, and how do these values present themselves? In this approach, whether motivated by ethical anthropocentrism or a more inclusive perspective, environmental ethics considerations are crucial to environmental policy and decision making. For, just as ontological anthropocentrism emphasizes our experience's limitations, anthropomorphism frequently demonstrates the human storyteller's attempt to create sympathetic characters who communicate and participate in relationships in the only way the storyteller fully understands, as a human, even if these character lives do not reflect ecological reality.

HL.c.2: Environmental Ethics

Imagine that ethical considerations aren't only about how people treat each other, but also about how we treat the environment. This concept helps us understand why some people believe that the environment deserves ethical considerations too, just like humans.

L.c.3: Different Ethical Frameworks

Think of ethical frameworks as different lenses through which people view the environment. Just like wearing different glasses changes what you see, these frameworks influence how people think about environmental issues. By understanding these frameworks, we can design questions that capture a wide range of viewpoints.

Similarly, anthropocentric thought is sometimes mistaken with anthropogenic action, or the consequences of humans on the environment. However, environmentalists may suggest that anthropocentrism is at the foundation of many of today's anthropogenic environmental concerns, such as climate change and widespread pollution. The fundamental issue of Lynn White Jr.'s important work in environmental ethics, "The Historical Roots of Our Ecological Crisis," which articulates a link between ethics and ecological degradation, is the interaction between religion, science, and the environment. According to White, our anthropocentric relationship with the natural world is to blame for our current environmental catastrophe; thus, in order to solve our environmental problems, we must reconsider our worldviews, or religious interpretations. "What we do about ecology is determined by our conceptions of the man-nature relationship," writes White (1967: 1205). Since then, ethicists have taken on the problem of creating a more inclusive moral community by defining and defending it in a series of nested responses about who and what might matter morally, and why.

Summary

Our environmental worldviews can be divided into three categories: technocentric, anthropocentric, and ecocentric. These are not mutually exclusive categories, and there are numerous alternate schemes.

Perspective	Technocentric	Anthropocentric	Ecocentric
Focus	Technology and its role in solving environmental issues	Human needs, desires, and well-being	Ecosystem health and the well-being of all organisms
View of Nature	Nature as a resource to be harnessed and controlled	Nature as a means to fulfill human needs and desires	Nature as an interconnected web of life
Human Role	Dominant and in control of nature and its resources	Central and superior to other species	Interdependent with nature; a part of the ecosystem
Ethics	Human well-being and progress as primary concerns	Human-centric ethics and rights	Preservation and conservation of natural systems
Environmental Problems	Can be solved through technological innovation	Primarily caused by human actions and can be mitigated	Result from the disruption of ecological balance
Solutions	Technological advancements, innovation, and engineering	Regulation and management of natural resources	Conservation, restoration, and sustainable practices
Sustainability Approach	Sustainable development and efficient resource use	Balancing human needs with environmental protection	Harmonizing human activities with ecological systems
Criticisms	Disregard for the inherent value of nature and non-human life	Lack of consideration for ecological interdependencies	Anthropocentric bias and overlooking ecosystem health

There are many ways to classify our perspectives, and these models are a useful but imperfect way of understanding the complexity of environmental worldviews. We all should also be aware that individuals often have a complex range of positions and that it is important to consider the different perspectives and worldviews when addressing environmental issues.

The values that support our viewpoints can be disclosed in our personal communication with the greater community, just as the values of companies can be revealed in their ads, media, policies, and behaviors. These values can be shaped by personal beliefs, education, culture, and experiences.

Individuals who value environmental protection, for example, may express their views through social media posts and conversations with friends and family, whereas organizations that value economic growth may express their views through advertisements and policies that prioritize economic development over environmental protection.

Conflict example

Hydraulic fracturing, or **fracking**, is a specific illustration of how conflicting values can lead to tensions between individuals and organizations.

■ **Figure 1.XX** A protest against a fracking development near Southport, UK

◆ **Fracking** is a technique for extracting natural gas from shale rock formations that involves injecting high-pressure water, sand, and chemicals underground.

Some individuals and groups recognize the economic benefits of fracking, such as enhanced energy independence and job development. Other individuals and organizations, on the other side, are concerned about the possible detrimental impacts of fracking on air and water quality, as well as the greenhouse gas emissions involved with the process.

Individuals and organizations that favor and oppose fracking face tensions as a result of this difference over values. For example, a local community that values economic expansion may favor the construction of a fracking well, whereas another community that prioritizes environmental protection may reject it. Furthermore, certain organizations may be in favor of fracking while others are opposed, causing tensions.

This example shows how differing values can produce tensions between individuals and organizations. It can be a good tool for people to appreciate the intricacies of environmental concerns, as well as the significance of considering the diverse views and values that form them. Furthermore it can also help people comprehend the significance of efficient communication and negotiation in reaching a long-term solution.

There are numerous websites that provide information about hydraulic fracturing, also known as fracking. Some reliable sources for information on this matter are:

1. The Environmental Protection Agency (EPA): Independent executive agency of US federal government.
2. ProPublica: an independent, non-profit news organization
3. Natural Resources Defense Council (NRDC): Environmental advocacy group
4. FracTracker Alliance: Non-profit organization
5. American Association of Petroleum Geologists (AAPG): Professional organization

■ Changing Perspectives and Beliefs

Perspectives and the beliefs that support them vary over time in all communities. Government or non-governmental organization campaigns, societal and demographic changes, and other factors can all have an impact on this. For instance, increased knowledge and awareness of the effects of climate change may lead to a shift in viewpoints on environmental issues.

By understanding how certain generational shifts have occurred, we may be able to better comprehend value change. For instance, smoking has witnessed considerable changes in attitudes and prevalence during the previous few decades as seen below figure xx.

By analyzing the attitudes and perspectives of different generations on smoking, we can obtain insight into how these values have changed over time and what causes may have influenced those changes. For example, we can investigate how anti-smoking campaigns in the 1960s and 1970s reduced smoking among the baby boomer generation, while the rise of e-cigarettes and vaping increased smoking among the younger generation.

Smoking rate of U.S. adults
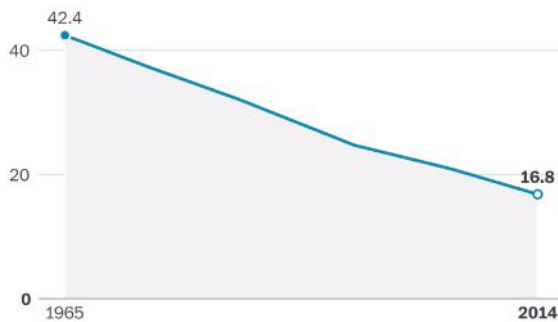
Source: CDC
THE WASHINGTON POST

■ **Figure 1.XX** Adult smoking rate in US has declined since 1960's

Tool 2 Technology

Use the Google Trends website to search for trends over time for an environmental or health issue, such as smoking/anti-smoking campaigns:
1. Open your web browser and go to the Google Trends website: **https://trends.google.com**.
2. In the search bar at the top of the page, enter the keyword or phrase related to the environmental or health issue you want to explore. For example, type "smoking" or "anti-smoking."
3. Once you've entered the keyword, press Enter or click on the magnifying glass icon to perform the search.
4. Google Trends will display the search results related to your keyword. Look for the section titled "Interest over time." This section provides a graph that shows the search interest for the keyword over a specific period.
5. By default, the graph displays worldwide search interest over the past 12 months. You can modify the time range by clicking on the "Past 5 years" dropdown menu and selecting a different timeframe. You can also choose a specific country or region from the "Worldwide" dropdown menu to see regional trends.
6. Examine the graph to analyze the trend of the keyword's search interest over time. Look for any patterns, spikes, or fluctuations in the data.
7. Scroll down the page to explore related topics, queries, and rising searches. This section provides additional insights into the specific subtopics and related search queries associated with your keyword.

Tool 2 Technology

Activity

Using the data from Google Trends and your understanding of perspective/worldview concepts, answer the following questions:

1. Analyze the trend in search interest for the environmental or health issue you chose (e.g., smoking/anti-smoking) over the specified time period. Identify any significant patterns, spikes, or fluctuations in the data. What factors might have influenced these trends?
2. How do the search interest trends reflect the changing perspectives or worldviews of individuals or society regarding the chosen issue? Discuss any possible correlations between the search interest and societal or environmental factors.
3. Compare the search interest trends for different regions or countries. Are there any variations in the patterns? What cultural, social, or contextual factors might explain these differences in perspective?
4. Based on the insights gained from Google Trends, reflect on the potential implications of the search interest trends for addressing the chosen environmental or health issue. How can this information inform awareness campaigns, policy-making, or educational initiatives?

Note: It's important to consider the limitations of Google Trends data, such as the reliance on internet search queries and the potential biases inherent in online search behavior. Use critical thinking and the integration of multiple sources of information to provide a comprehensive understanding of the chosen environmental or health issue.

Inquiry process

1. Download the data displayed in the Google Trends graph and conduct further data analysis or processing.
2. Use a spreadsheet (e.g., Microsoft Excel, Google Sheets) to visualize the data, create additional graphs, or calculate statistical measures (e.g., averages, growth rates).
3. Explore how the data can provide more in-depth insights into the search interest trends and their implications.

■ Influences on the Environmental Movement

Individuals, literature, the media, major environmental disasters, international treaties, and technical advances have all had an impact on the evolution of the environmental movement. These factors have changed our understanding of the environment as well as society attitudes and behaviours toward environmental challenges.

Individuals have made major contributions to the growth of the environmental movement. For example, Wawa Gatheru, similar to Swedish activist Greta Thunberg, is a young environmentalist who advocates for environmentally friendly activities in her neighborhood in Kenya: https://www.wawagatheru.org/about.

Environmental issues have also been impacted by literature. Rachel Carson's key work, 'Silent Spring,' published in 1962, is recognized as a fundamental work in the environmental movement for raising attention to the negative effects of pesticides on wildlife and the environment. James Lovelock's publications on the Gaia hypothesis claim that the Earth is a self-regulating system and provide an ecological viewpoint on the environment. Bill McKibben's The End of Nature (1989) was one of the first books to bring the problem of climate change to a wide audience.

David Wallace-Wells's The Uninhabitable Earth (2019) is a dramatic study of the most recent scientific research on climate change and its repercussions on mankind and the earth.

Significant environmental disasters have also had an impact on cultural views toward environmental issues. For example, the Minamata tragedy in 1956 was caused by the release of toxic garbage into Japan's Minamata Bay, resulting in widespread pollution and severe health impacts among the local population.

The media has had a large influence on cultural attitudes regarding environmental issues. Al Gore's documentary "An Inconvenient Truth" (2006), for example, raised awareness about climate change and the need for action. Other documentaries, such as No Impact Man (2009) and Breaking Boundaries (2021), have influenced public opinion on environmental issues.
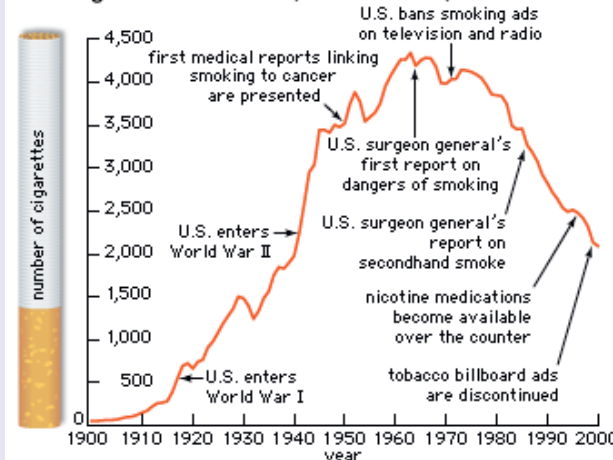
International treaties have also had an impact on societal attitudes toward environmental challenges. For example, both the 1992 Rio Earth Summit and the 2012 Rio+20 conference helped to increase awareness about environmental challenges and led in the development of international accords to address these issues. United Nations Climate Change Conferences, such as COP 21 in 2015, have also influenced social attitudes toward environmental issues and the establishment of international climate change agreements.

Technological progress has also had an impact on societal attitudes toward environmental challenges. For example, the Green Revolution of the 1950s and 1960s, which concentrated on raising crop yields via the use of new technologies and methods, helped to address food security challenges but also resulted in higher use of pesticides and fertilizers, which had significant environmental implications. Recent technical developments, including as lower energy inputs and enteric fermentation, as well as plant-based meats, are addressing animal agriculture's environmental impact and supporting more sustainable methods.

As a more specific example, we can investigate specific changes such as smoking (see Figure 1.1.6), littering, eating meat, or how traditional Indigenous lifestyles are being replaced by modern ones. Therefore, we can gain a better understanding of how perspectives and beliefs change over time and how these changes are influenced by a variety of factors by studying these issues.

ATL ACTIVITY

Adult per capita cigarette consumption and major smoking and health events, United States, 1900–2000

first medical reports linking smoking to cancer are presented

U.S. bans smoking ads on television and radio

U.S. surgeon general's first report on dangers of smoking

U.S. enters World War II

U.S. surgeon general's report on secondhand smoke

nicotine medications become available over the counter

U.S. enters World War I

tobacco billboard ads are discontinued

number of cigarettes

year

Source: U.S. Department of Agriculture
© 2005 Encyclopædia Britannica, Inc.

What does the graph on this page tell you about U.S cigarette consumption between 1900 and 2000? Does this surprise you?

■ **Figure 1.XX** U.S cigarette consumption between 1900–2000 [https://www.britannica.com/topic/smoking-tobacco/The-age-of-the-cigarette]

Besides smoking, perspectives and beliefs regarding littering have evolved over time. In the past, littering may have not been seen as a significant concern. However, as environmental awareness grew, people started recognizing the detrimental effects of litter on ecosystems and human health. This shift in perspective has been influenced by several factors. For example, education and awareness campaigns highlighting the harmful effects of plastic pollution in oceans have led to a shift in perspective and a call for responsible waste management. Also, legal measures and regulations against littering, along with fines and penalties, have helped change societal norms and discourage littering behavior. Strict enforcement and visible consequences have contributed to a change in perspective.

Perspectives and beliefs regarding meat consumption have also undergone changes over time. Historically, meat consumption was seen as a vital part of human diet and cultural practices, if often a privilege not affordable to all people or at all times. However, several factors have contributed to evolving perspectives on eating meat in Western countries:

- Health concerns: Scientific studies linking excessive meat consumption to health issues, such as heart disease, obesity, and certain cancers, have influenced people's perspectives on the health implications of consuming meat. This has led to the rise of vegetarianism, veganism, and plant-based diets as alternatives.

- Environmental awareness: The environmental impact of meat production, including deforestation, greenhouse gas emissions, and water pollution, has gained significant attention. Increased awareness of these issues has prompted some individuals to reduce or eliminate their meat consumption to mitigate environmental harm.

- Ethical considerations: Concerns about animal welfare and the ethics of raising and slaughtering animals for food have played a role in shaping perspectives on meat consumption. Animal rights movements and documentaries exposing factory farming practices have raised awareness and led to changes in beliefs about the treatment of animals.

- Cultural shifts: Cultural changes, such as globalization and increased exposure to diverse dietary practices, have contributed to shifts in perspectives on meat consumption. For example, the rise of vegetarian and vegan cuisines and the availability of plant-based meat alternatives reflect changing beliefs and preferences.

Inquiry tools

You may discover further perspectives by searching yourself, **one** example of influence from each of the following categories: an individual environmental activist, an author, the media: e.g., Al Gore's documentary 'An Inconvenient Truth' (2006), No Impact Man (2009), Breaking Boundaries (2021), an environmental disaster: e.g., Minamata disaster (1956), Chernobyl disaster (1986), Fukushima Daiihi nuclear disaster (2011), international agreements e.g., Rio Earth Summit— 1992 and Rio+20 (2012); 2015 United Nations Climate Change Conferences, e.g., COP 21 and 27, and technological developments: e.g., the Green Revolution, reduction of energy inputs and enteric fermentation, plant-based meats, or scientific discovery: e.g. pesticide and biocide toxicity, species loss, habitat degradation.

Examples may also be recent, from indigenous cultures or local/global events of your interest.

To summarize, a variety of variables have influenced the evolution of the environmental movement, including individuals, literature, the media, big environmental disasters, international accords, and technical breakthroughs. These factors have changed our understanding of the environment as well

Theme A: Foundation

as society attitudes and behaviors toward environmental challenges. Students must comprehend these impacts in order to develop a deeper awareness of the intricacies of environmental concerns and the need of considering other points of view while tackling these challenges.

ATL ACTIVITIES

1. Explore Your Perspectives and Actions:

Engage in debates or discussions with your peers about your own perspectives on various environmental and social issues. Reflect on how these viewpoints might influence the choices you make and your behaviors in relation to these topics. Share insights on the connections between personal beliefs and actions.

2. Advocate for Change Through Persuasive Materials:

Take on the role of an advocate by designing materials that effectively promote a specific environmental or social cause. Use your creativity to develop compelling content that highlights how individual actions can play a pivotal role in driving positive transformations towards a more sustainable society.

3. Delve into Environmental Problem-Solving:

Participate in discussions that explore the multifaceted approach to addressing environmental challenges. Investigate the roles of politics, intergovernmental organizations (IGOs), non-governmental organizations (NGOs), and even individual efforts through platforms like social media. Consider joining a Model United Nations (MUN) group to collaboratively explore solutions to real-world environmental issues and understand the broader context of problem-solving efforts.

REVIEW QUESTIONS

1   **Writes** an essay with reference to two examples to **discuss** the factors affecting contrasting environmental values and perspectives.

2   **Design** your own Environmental Value System model on the issue of deforestation using the table below as a template.

Input	Perspective	Output
List some of the sources that shaped your perspective	Sate your perspective on the issue of deforestation	List the actions you would take

3. Define briefly three environmental perspectives: technocentric, anthropocentric and ecocentric and give one example for each.

EXAM PRACTICE QUESTIONS

1   **Discuss**, with reference to two contrasting environmental problems, the technocentric belief that technology may provide solutions to environmental problems. (May 2011 Paper 2 ESS)   [X marks]

2. **Outline** the factors that lead to different environmental value systems in contrasting cultures.
    (N18/4/ENVSO/SP2/ENG/TZ0/XX – Page 10 Question 5a)   [3 max]