The Presentation of Nature in Secondary School English Textbooks from an Ecolinguistic Perspective — A Case Study of the PEP Grade Seven English Textbooks

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Abstract: *Ecological education has become increasingly important due to the rising ecological crises, among which language textbooks play a significant role. This study, based on the ecological transitivity system proposed by He, conducts an ecolinguistic analysis of nature discourse in Grade Seven English textbooks published by the People's Education Press (PEP). The study aims to explore the images of nature presented in the textbooks and to uncover the underlying ecological awareness. The findings reveal the construction of five types of images of nature, namely nature as a source of human aesthetic pleasure, nature as an object of scientific inquiry, nature as an object of observation, personified nature, and nature as a victim, each conveying distinct ecological characteristics. The images of nature generally align with the ecological civilisation principles emphasised in contemporary Chinese environmental discourse; however, the distribution of different types also reveals a certain degree of anthropocentrism.*

Keywords: Ecolinguistic transitivity; Images of nature; English textbooks

1. Introduction

Ecological education has become a critical global concern in response to increasingly severe ecological crises. Language textbooks, as a primary medium for introducing ecological values, play a significant role in fostering students' ecological awareness. In China, the English Curriculum Standards for Compulsory Education[1] designates human-nature relations as one of three principal thematic themes. In accordance with the standards, a new edition of junior secondary English textbooks was published by the People's Education Press (PEP) and introduced in autumn 2024. Given that this textbook series has been recently updated, it is essential to examine the ecological awareness embedded within its content.

Research on English textbook content from an ecolinguistic perspective can be categorised into two strands. The first strand focuses on explicit environmental discourse, exploring how environmental issues are presented in specific units or themes[2][3][4][5]. These studies indicate that while environmental topics are included in textbooks, they are often addressed in a simplified or inadequate manner. The second strand shifts attention to implicit presentation of nature in textbooks, investigating how images of nature are linguistically constructed. This analysis uncovers underlying trends such as marginalisation, aestheticisation, or anthropocentrism[6][7].

Given that explicitly stated environmental issues are relatively limited in junior secondary English textbooks, the study examines the implicit presentation of nature in them. Adopting an ecolinguistic perspective, the research utilises the ecological transitivity framework proposed by He et al. [8]. And the study addresses the following research questions: 1) What images of nature are constructed in the Grade Seven English textbooks? 2) Through what transitivity patterns are these images of nature realised? 3) What ecological awareness is implied by these images of nature?

2. Research Design

2.1. Theoretical Framework

To date, ecological discourse analysis has not fully established itself as a stable research paradigm at the international level[9]. It has relied extensively on established discourse-analytic approaches, such as Critical Discourse Analysis (CDA), Multimodal Discourse Analysis (MDA), and Harmonious Discourse Analysis[10][11]. However, recent studies have increasingly integrated ecological philosophy and extended the analytical framework of Systemic Functional Linguistics, through which ecological discourse analysis has gradually developed its own theoretical foundations.

The study therefore adopts ecological discourse analysis as an emerging analytical framework, specifically utilising the ecological transitivity system proposed in New Developments in Ecological Discourse Analysis[8]. Within this framework, the study examines the participants, process types, and circumstances to interpret how images of nature are constructed and to uncover the ecological values embedded within the discourse.

2.2. Corpus Selection and Processing

The corpus is drawn from the PEP Grade Seven English textbooks. The selection of this textbook series is based on the following criteria. 1) The textbooks are compiled under the organisation of the Ministry of Education, and are widely used in secondary schools nationwide, ensuring both authority and representativeness. 2) The textbooks are developed in accordance with the Compulsory Education English Curriculum Standards (2022 edition) and were officially put into use in the autumn semester of 2024, making them the most up-to-date junior secondary English textbooks currently in use.

After the textbooks were selected, further screening and processing of the corpus were conducted.

1) Corpus collection and classification. The Grade Seven English textbooks consist of various components, including listening, speaking, reading, and grammar activities, which aim to develop students' comprehensive language skills. However, only listening texts that are repeated more than twice, along with core and extended reading texts, require students to engage in in-depth comprehension. Based on these criteria, nature-relevant texts were identified and extracted, converted into TXT format, and manually proofread. The final corpus comprises 10,276 English characters and 266 clauses. Drawing on previous textbook studies on the classification of images of nature[6][7][12], images of nature in the corpus are classified into five types: personified nature, nature as an object of observation, nature as an object of scientific inquiry, nature as a source of human aesthetic pleasure, and nature as a victim.

2) Corpus annotation and quantification. Clauses involving different images of nature in the corpus were annotated individually, with particular attention to process types, participants, and circumstances. The annotation was then repeatedly checked by two other researchers to ensure reliability. The annotated data were subsequently quantified and analysed to reveal the ecological characteristics and value orientations associated with each category.

3. Findings and discussions

3.1. Overall Distribution of Images of Nature in the Textbooks

Table 1. Overall Distribution of Images of Nature in the Textbooks

Images of Nature	Frequency	Percentage
Nature as a source of human aesthetic enjoyment	77	28.95%
Nature as an object of scientific inquiry	63	23.68%
Nature as an object of observation	62	23.31%
Personified nature	48	18.05%
Nature as a victim	16	6.02%
total	266	100%

All clauses related to nature in the textbooks were subjected to transitivity analysis, the results of which are revealed in Table 1. The analysis identified five distinct images of nature in the textbooks. In descending order of frequency, these are: nature as a source of human aesthetic enjoyment, nature as an object of scientific inquiry, nature as an object of observation, personified nature, and nature as a

victim.

3.2. Transitivity Analysis of Different Images of Nature

3.2.1. Nature as a Source of Human Aesthetic Enjoyment

Nature as a source of human aesthetic enjoyment refers to nature being presented as an object that satisfies human interests, entertainment, or functional needs, such as food, pets, or recreational spaces. In terms of process distribution, mental processes account for the largest proportion (40.26%), typically expressing human feelings, attitudes, and evaluations arising from interaction with nature. Material processes rank second (35.06%), mainly describing human-nature interactions, such as experiencing farming activities. Relational processes are the least frequent (24.68%), primarily used to describe the characteristics or attributes of nature. For example:

(1) Mental processes

Today we went on a school trip to a farm! It was tiring but great fun (Mental processes-affective) ! .... I was very interested (Mental processes-affective) because I usually only see (Mental processes-perceptive) them in the supermarket ... but I enjoyed (Mental processes-affective) working with my hands.

(2) Material processes

Some people are jogging, walking, and riding bikes (Material processes-action) in Central Park ... Some tourists are taking a boat (Material processes-action) along the River Seine too!

(3) Relational processes

The elephant is (Mental processes-affective) my favourite animal because they are (Relational processes-attributive) strong and clever… They are (Relational processes-identifying) also a symbol of good luck here… The elephant is (Relational processes-attributive) our national animal.

In mental processes, the image of nature is predominantly constructed as a passive object, whose value is mainly tied to its ability to satisfy human emotions. As shown in Example (1), affective responses such as "liking," "interest," and "enjoyment" arise from human engagement with farming activities, indicating that nature is seen as a source of pleasure rather than as an agentive entity with intrinsic value. A similar pattern can be observed in material processes, where nature frequently functions as a background or setting for human activities. In Example (2), expressions such as "in Central Park" or "along the River Seine" position nature as a space for leisure activities. Although such clauses appear to depict interaction between humans and nature, nature remains devoid of agency and serves only as a functional space for human use. Even in relational processes that seemingly place nature in a more central grammatical position, its meaning is still largely shaped by human-centred evaluative frameworks. In Example (3), elephants are "liked" because they possess qualities admired by humans, such as strength and intelligence; they are regarded as symbols of "good luck" because this aligns with long-standing human cultural beliefs. In all these cases, nature's significance is defined by how it is perceived and evaluated by humans rather than by its own agency.

Overall, while the image of nature as a source of human aesthetic pleasure conveys a generally positive attitude towards nature, it also reflects an implicit anthropocentrism. Nature is predominantly represented as a passive object with limited agency or intrinsic value, functioning more as a tool or backdrop for human use than as a participant in a genuinely reciprocal human-nature relationship.

3.2.2. Nature as an Object of Scientific Inquiry

Nature as an object of scientific inquiry treats nature as a target of human cognition and investigation, emphasising understanding through observation, analysis, and scientific explanation. This image is typically realised in informational or science-oriented texts. In this category, mental processes account for the largest proportion (52.38%), involving human perception and cognition; material processes account for 39.68%, primarily depicting the behaviours and characteristics of nature itself; relational processes are least frequent (7.94%), mainly introducing states, settings, or locations. For example:

(1) Mental processes

Do you know (Mental processes-cognitive) how weather affects our lives? Well, it affects (Material processes-action) where we go, what we do, and what we wear ... And it also affects (Mental

processes-affective) how we feel and behave. We often use (Mental processes-cognitive) weather language to describe how we feel.

(2) Material processes

Octopuses can also do (Material processes-eventive)many amazing things. Most of them can change (Material processes-action) their colour and shape to look like plants or other sea animals ... They keep (Material processes-eventive) it inside a very small bag in their body.

(3) Relational processes

Among the many amazing animals in the world, few are (Mental processes-identifying) as strange and unusual as the octopus ... There are (Mental processes-affective) around 300 different kinds of octopuses ... There was (Mental processes-existential) even an octopus over nine metres long!

Unlike the relatively surface-level affective responses found in images of nature as a source of aesthetic pleasure, mental processes here focus more on perception and cognition. In Example (1), weather is shown to significantly influence human behaviour, emotions, and thought processes. While humans are the grammatical subjects in these clauses, they occupy a relatively passive role at the semantic level, as their feelings, actions, and language are moulded by changes in weather. In this context, nature is constructed not as a passive recipient but as an active force influencing human experience. Nature's agency becomes even more salient in material processes. In Example (2), octopuses are depicted as capable of performing a range of self-initiated actions driven by their innate biological capacities rather than human intervention. In other words, nature's actions are not subordinate to human experience but reflect its intrinsic vitality and value. Relational processes, as in Example (3), serve mainly descriptive functions by objectively stating quantities and physical attributes.

Taken together, the image of nature as an object of scientific inquiry foregrounds nature's agency and autonomy. Rather than being constructed as a passive object subordinated to human purposes, nature is represented as an active and, at times, influential participant in human cognition and understanding, thereby providing linguistic support for the concept of ecological equality.

3.2.3. Nature as an Object of Observation

Nature as an object of observation reflects the direct experiences of ordinary people with the natural world. In this type, relational processes are most frequent (48.39%), mainly presenting the states and attributes of natural beings or phenomena; material processes account for 37.10%, depicting interactions between humans and nature or nature's own activities; mental processes are least frequent (14.52%), describing emotions and cognition arising after observation. For example:

(1) Relational processes

Elephants look (Relational processes-attributive) very different from other animals. They are (Relational processes-attributive) huge. They have (Relational processes-possessive) large ears and long trunks.

(2) Material processes

My friends and I went down (Material processes-action) to the Yangtze River to find a good place to watch it. We took (Material processes-action) cameras, chairs, food and drink, and special glasses so we could look (Material processes-action) at it... Slowly, the moon moved (Material processes-eventive) in front of the sun.

(3) Mental processes

I was really inspired by (Mental processes-affective) the eclipse this morning. In the afternoon, I spent hours reading (Mental processes-cognitive) about astronomers, eclipses, and how the planets move in our solar system.

The above examples focus on observations of elephants and a solar eclipse. In Example (1), elephants are described as "huge" animals with "large ears and long trunks." These descriptions are largely free of overt emotional colouring and instead delineate the characteristics of nature through descriptive and classificatory language. In this context, humans function primarily as observers, while nature is presented as an independent entity that displays its own states and attributes. By contrast, although material and mental processes are grammatically human-centred, the cognitive and experiential activities they encode are driven by natural phenomena. In the material processes of

Example (2), the friends' travelling to the Yangtze River with cameras and supplies is in response to the occurrence of a solar eclipse. Similarly, in the mental processes of Example (3), the speaker's emotional response and subsequent engagement in reading and reflection are also triggered by witnessing the eclipse. These patterns indicate that nature is not merely a passive object of observation, but an active stimulus capable of eliciting positive emotions and deeper cognitive processes.

Overall, the image of nature as an object of observation weakens an absolute human-centred perspective by foregrounding nature's presence and value. Such representations acknowledge the independence of nature and guide learners to perceive the co-existence between humans and nature through everyday observation.

3.2.4. Personified Nature

Personified nature attributes human-like appearance, emotions, and behaviours to natural entities. In the textbooks, this type predominantly appears in fable-like narratives. In terms of process distribution, mental processes account for 47.6%, mainly representing communication and emotional activities; material processes account for 28.6%, depicting actions and behaviours; relational processes account for 23.8%, highlighting similarities or connections between nature and humans. For example:

(1) Mental + material processes

It made the poor duckling very sad (Mental processes-affective), so he decided to (Mental processes-volitional) search for a new home. He met (Material processes-action) many other birds, but all of them thought (Mental processes-cognitive) that he was ugly too. "May I stay with you?" he asked (Mental processes-communicative) hopefully.

(2) Relational processes

Elephants are (Relational processes-associative) like us in some ways. They are (Relational processes-attributive) very playful and love to play in the water. They are (Relational processes-attributive) great swimmers. They are (Relational processes-attributive) also clever.

In Example (1), the discourse centres on the Ugly Duckling. Through detailed depictions of mental and material processes, the text portrays the duckling's inner pain and struggle when confronted with ridicule and rejection from other animals. Although the protagonist is an animal character, the personified representation of his emotional experiences and growth journey enables students to empathise strongly with him, thereby conveying positive values related to personal development. Example (2) highlights similarities between elephants and humans through relational processes. By attributing behaviours related to diet, social interaction, and memory to elephants, the text presents them not merely as biological creatures but as beings endowed with human-like qualities. This representation helps students gain a better understanding of elephants, fostering a sense of familiarity that strengthens their identification with nature.

Overall, these examples demonstrate that the image of personified nature shifts the focus back onto nature itself by endowing it with emotions, consciousness, and agency. By employing personification, the textbooks enhance engagement and readability while subtly encouraging students to form affective connections with nature, thus contributing to the cultivation of ecological awareness.

3.2.5. Nature as a Victim

Among the images of nature identified in the textbooks, nature as a victim occurs least frequently. This image primarily represents the negative impacts of human activities on nature, such as water pollution, deforestation, and the killing of animals. The process types involved in this category are relatively limited, consisting mainly of material processes (75%) and relational processes (25%). Material processes are used to illustrate the harmful actions humans take against nature, while relational processes depict the disadvantaged conditions that result from these actions. For example:

However, they are (Relational processes-attributive) in danger. They live (Material processes-action) in forests, but people cut down (Material processes-action) too many trees. People also kill (Material processes-action) elephants for their ivory. Let's save (Material processes-action) the forests and not buy (Material processes-action) things made of ivory.

In the text above, "they" refers to elephants. Material processes such as "cut down" and "kill" explicitly describe human actions that harm both elephants and their habitats, whereas the relational process "are in danger" highlights the precarious conditions elephants face as a result. Together, these processes foreground the unequal relationship between humans and nature by emphasising nature's

vulnerable position in the face of human exploitation. Through straightforward and objective narration, this mode of representation seeks to raise students' awareness of responsibility and conservation.

4. Conclusion

Through a transitivity-based analysis of ecological discourse in the PEP Grade Seven English textbooks, this study finds that the textbooks are, on the whole, aligned with the ecological civilisation principles emphasised in contemporary Chinese environmental discourse. The five images of nature constructed in the textbooks demonstrate a certain level of ecological awareness, contributing positively to the cultivation of students' ecological values, including understanding, respecting, appreciating, and protecting nature.

However, the findings also reveal notable imbalances in the distribution of different images of nature. In particular, the relatively dominant image of nature as a source of human aesthetic pleasure tends to position nature primarily as a background or object for human activities, with its agency and subjectivity insufficiently foregrounded, thus reflecting an implicit anthropocentrism. In contrast, the image of nature as a victim, which directly addresses the negative impacts of human actions on nature, appears less frequently, potentially limiting students' opportunities to engage more deeply with ecological issues and environmental ethics.

By applying ecological transitivity analysis, this study demonstrates the value of this approach as an analytical tool for evaluating the ecological awareness embedded in language textbooks. Nevertheless, the present study remains limited in scope, as it examines only the PEP Grade Seven English textbooks. Future research could extend the analysis to other grade levels or textbook series and further investigate how these ecological values embedded in textbooks are interpreted and internalised in real classroom practice.

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