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Exploring ecological identity from the perspective of systemic functional linguistics

<https://doi.org/10.1515/jwl-2021-0013>

Received July 20, 2021; accepted November 18, 2021; published online December 29, 2021

Abstract: Ecological identity, acting as the baton to guide the public's behavior in nature, is closely correlated with environmental crises that threaten human survival. Previous studies of ecological identity are mostly conducted in the domain of sociopsychology with an emphasis on human's attitude and behavior. Less attention, however, has been paid to the discursive construction of one's ecological identity. The current study aims to build a framework to explore the mechanism of discursive strategies in constructing one's ecological identity. To this end, this article classifies different ecological identities according to their impact on nature and the ecosophy of holism. It then puts forward a framework based on systemic functional linguistics to explore how lexicogrammatical resources can be employed strategically in the construction of ecological identity. The framework is significant for ecolinguistic investigations of identity and the cultivation of human's critical language awareness related to the protection of ecosystems.

Keywords: discursive strategies; ecological identity; systemic functional linguistics

1 Introduction

Ecological identity manifests one's attitude towards nature-related issues and the corresponding behavior in the natural environment. It is a new dimension of identity research compared with the traditional aspects of gender, nationality, religion, and ethnicity. Ecological identity studies are devoted to providing solutions to environmental problems threatening human existence through adjusting or correcting people's original living habits and discourse patterns.

Previous studies on ecological identity are mainly conducted from the perspective of sociopsychology, which focus on individuals' psychological cognitive

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behavioral characteristics in nature. Less attention, however, is paid to the analysis of discourse features, which reflect one's ecological identity through applying linguistic theories. Thus, this research draws theories from Systemic Functional Linguistics (hereafter SFL) to build a framework to further probe the mechanism of discursive strategies in constructing one's ecological identity and its ecological effects on the normal running of ecosystems.

2 Previous studies of ecological identity

Ecological identity refers to the portrait of oneself when he or she is dealing with natural issues. The topic is discussed under the background of frequent global environmental crises caused by the exponential growth of the human population and the increased consumption of natural resources since the Industrial Revolution. In addition to the development of environmental protection technology, the study of one's image in nature aims to provide efficient solutions to the improvement of the surrounding environment from the perspective of sociopsychology and linguistics.

The category of ecological identity, or the criterion of judging one's image in environment, is not as clear as identities of other types. As for the four dimensions of identity, which are nation, religion, gender, and ethnic proposed by McKinlay and McVittie (2011), the category of each dimension is indicated by biological and social properties. For instance, when gender identity is mentioned, people have no difficulty in choosing their attributes. The same applies to identities constructed in various contexts such as court, hospital, and other working institutions.

However, in relation to the types of ecological identity, they are the result of the interaction of a variety of social and political factors. Among these factors, the most obvious one is environmental movements sponsored by organizations with specific objectives about nature, climate, pollution, and so on. People who advocate sustainable development and attach importance to the healthy operation of ecosystems are labeled as environmentalists, which indicates their ecological identity. Linneweber et al. (2003) suggested that the formation of a specific ecological identity was deeply influenced by his or her social and geographic context. The different categories of identity, according to Benwell and Stokoe (2006), are not analytically foundational, but rather themes, which can be explored by using different perspectives and discursive strategies.

Another key concept in describing one's ecological identity is ecosophy defined by Naess (1995) as principles, regulation, value preferences, and hypotheses related to ecological issues. The code of conduct in natural environment advocated by a certain type of ecosophy often reflects the feature of the corresponding ecological identity. Zavestoski (2003) explored the strategies applied by

people who implemented the principles of deep ecology, an ecosophy emphasizing the inherent value of all living species regardless of their utility to human requirements, with the purpose of constructing and maintaining the identity of deep ecologist. Detailed discussion on ecosophy is presented in Section 3.

The significance of studying ecological identity is illustrated in the domain of sociopsychology and ecolinguistics. Sociopsychological investigations (e.g. Clayton and Opatow 2003; Zelezny and Schultz 2002) focus on attitudinal and behavioral patterns manifested by a certain type of ecological identity and the corresponding impact on natural environment. Ecolinguistic studies (e.g. Nash 2018; Stibbe 2015), on the other hand, show more interest in the discursive construal of one's image related to natural issues. Despite the different research perspectives, they both agree on the point that positive ecological identities help to solve environmental crises, but negative ones impede the normal running of ecosystems.

2.1 Ecological identity in sociopsychology

The analysis of ecological identity from the perspective of sociopsychology was originated in the 1990s, which is marked as the accelerated economic globalization. Social psychologists represented by Clayton (1996) and Opatow (1996) argued that the mission of exploring solutions to ecological crisis does not belong to natural scientists exclusively. Social scientists should have the responsibility of providing ecologically friendly suggestions through observing and measuring the patterns of the public's behavior in natural environment.

Similar to the diverse understandings of "identity" in different disciplines, little consensus has been achieved on the definition of "ecological identity" or "environmental identity" in sociopsychology. Thomashow (1995: 3) used the term "ecological identity" and defined it as "the way people construe themselves in relationship to the earth". As for Weigert (1997: 159), he preferred "environmental identity" and explained the meaning as "experienced social understanding of who we are in relation to, and how we interact with, the natural environment as other". The same term is illustrated as to how we orient ourselves to the natural world (Clayton and Opatow 2003). Despite these differences in definition, this phenomenon reflects a growing interest in approaching identity and natural environment.

The prime aim of studying ecological identity in sociopsychology is to explore the role of identity in mediating human's behavior and attitude toward natural environment. Hinds and Sparks (2008) believed that if we better understand what makes people passionate about natural issues, we can reveal and popularize the

psychological mechanisms capable of fostering positive environmental policies and actions.

The second objective is to explain the interdependent effect caused by social and natural forces on the formation of one's ecological identity. Kempton and Holland (2003) found that the ecological value and the responsibility to non-human entities advocated in environmental movements have exerted a deep influence upon individuals' attitudes and behaviors in nature.

Besides, social psychologists (e.g. Walton and Jones 2018) concentrate on the invention of measurement scales to quantify one's ecological identity in various social contexts. For example, the design of Reasoned Action Approach (Fishbein and Ajzen 2010) is used to predict the public's pro-environmental behaviors. The major critique of the existing ecological identity measures is the lack of a comprehensive scale, which can cover all the facets of identity.

The last focus of investigating ecological identity lies in the research of one's experience in nature as a member of the social group. Zavestoski (2003) concluded that by following the rules and values encouraged by deep ecologists, individuals can construct and maintain his or her ecological identity. The practice of different ecosophies in natural and social environments can be transformed into tags added to the public.

The research methods applied in sociopsychological investigation of ecological identity are diverse considering the intrinsic complexity of both identity and environment. Qualitative methods such as structured and semi-structured interviews, focus groups, and case studies are applied to probe individuals' responses to natural issues. Quantitative methods represented by questionnaires are adopted to provide more convincing experimental evidence.

Work on ecological identity from sociopsychological perspective functions in raising the public's environmental awareness through careful observation and analyses of human's attitudes and actions in nature. Nevertheless, ecological identity is also manifested in people's daily talk and some multimodal semiotic resources such as sculptures, drawings, and music, beyond his or her emotions and behaviors in natural environment. Therefore, it is necessary to study ecological identity from the perspective of linguistics.

2.2 Ecological identity in ecolinguistics

Ecolinguistics began with Einar Haugen's groundbreaking talk about "The Ecology of Language" (1972), in which he defined "language ecology" as "the study of interactions between any given language and its environment" (Haugen 1972: 325). The term is further devolved and metaphorized as the study of language's impact

on the forming and maintaining of the relationship between human and non-human species (Alexander and Stibbe 2014). The appearance of ecolinguistics serves as a significant response to modern environmentalism originated by Rachel Carson's *Silent Spring* (1962).

Studies of identity in ecolinguistics follow the constructionist view that the image of 'Self' is built through social interactions, in which language acts as a mediator and supplies limitless lexicogrammatical resources (see Alexander 2018; Cook and Sealey 2018). Moreover, ecolinguistic work on identity is differentiated from other branches for its emphasis on the ecological aspect of oneself when he or she is dealing with environmental issues (Stibbe 2014). However, there is no clear illustration of the concept 'ecological identity' proposed in the relevant literature. Rather, the frequently researched item 'identity' (Goatly 2002; Stibbe 2015; Stöckl and Molnar 2018) is discussed in terms of the relationship between human and non-human species that existed in both physical and social environment.

As the analysis of ecological identity in sociopsychology, ecolinguistic research also takes ecosophy into consideration when the property of identity is involved in texts of various genres. The difference lies in that ecolinguistic scholars (He and Wei 2018b; Huang 2016; Miao and Li 2021; Stibbe 2015) prefer to practice their personal ecosophy built on their social and educational experiences concerning the relationship among human, non-human animals, and the environment.

The research paradigm of exploring ecological identity adopted in ecolinguistics includes mainly SFL, the approach of Critical Discourse Studies (hereafter CDS), cognitive linguistics, and ecological discourse analysis. Halliday (1990), the founder of SFG, put forward the view of language system evolution. According to him, the distinction between countable and uncountable English nouns such as petrol, gas, water, and earth can mislead language users into believing that natural resources are unlimited, which will be detrimental to ecosystems. Hence, language systems should evolve continually to improve the ecological environment.

The use of SFG in ecolinguistic investigation of identity is seen in discourses of advertisements (Stibbe 2015), media reports (Döring 2018; Goatly 2002), public speech (Li and Liu 2020), and textbooks (Zahoor and Janjua 2020). They have criticized the value advocated by consumerism and the unequal power relations between human and non-human species. However, these studies fail to propose some positive ecological identities which are beneficial to the normal running of ecosystems. Because of it, Huang (2016, 2018) put forward the concept of harmonious discourse analysis intending to study the sustainable relationship between nature and organisms of different types.

Influenced by Foucauldian and other constructionists' views, critical discourse analysts (see Alexander 2009, 2018; Poole and Spangler 2020) argue that individuals or groups' ecological identity is discursively constructed owing to the

social representation of the natural world. Such representations are often seen in the form of social media which are likely to affect and manipulate one's ecological values on the relationship between human and non-human entities.

Studies of identity in CDS (Reisigl and Wodark 2001; Wodak 2001) also adopt the discourse-historical approach which consists of contents, strategies, means, and forms of realization. Among the three dimensions, discursive strategies explained as the mediation between the aims of social interaction and the realization of linguistic means (Heinemann and Viehweger 1991) is the most important for the analyses of identities. Wodak et al. (2009) put forward discursive macro and micro strategies, which correspond to the social macro and micro functions of discursive acts, such as construction, justification, and dismantling. Work on discursive strategies applied in identity building is often found in political discourses (Reyes-Rodríguez 2008; Zhao and Song 2021).

Following the paradigm of cognitive linguistics, work on ecological identity concluded that images of oneself were nothing but models in people's minds demonstrated in special ways of speaking, writing, and behaving (Lakoff 2010). Stibbe (2015) studied ecological identities constructed in advertising texts through analyzing the underlying metaphors and proposed that the aim of ecolinguistics was to examine the working mechanism of language in building destructive identities and reshaping one's positive identities.

The term, ecological discourse analysis, appears firstly in Alexander and Stibbe's paper (2014) with the purpose of illustrating that ecolinguistics focuses not only on texts of environmental issues but also on the ecological perspective of analyzing other text types. He and Wei (2018a) put forward that ecological discourse analysis should be treated as an independent paradigm for its origin, research objectives, the consideration of ecosophy, and research procedures. Work on ecological discourse analysis of identities (Goatly 2002, 2006, 2018) argued that the positive image of oneself can be found in natural writings for their concern about the healthy development of ecosystems.

2.3 Summary

The review of relevant literature shows that ecological identity is a newly appeared dimension compared with the former identity studies. The judgement of one's ecological identity relies on his or her ecosophy rather than the natural distinctive factors such as nation and gender. The sociopsychological and ecolinguistic investigations have examined both the behavioral and discursive manifestations of ecological identities. The problem lies in the lack of a model for identifying and

categorizing ecological identities in discourse by analyzing lexicogrammatical resources.

3 Ecological identity and ecosophy

The linguistic approach to ecological identity often involves another concept, ecosophy. Definitions of both ecological identity and ecosophy were given by Naess (1995) in his exploration of deep ecology. Ecological identity, according to him, is how people construe themselves in relation to environmental issues. After that, this scholar coined the term, ecosophy, from a shortening of “ecological philosophy” to explain the norms, positions, and value preferences adopted by people with different ecological identities. Ecosophy is so far perceived as a criterion to evaluate whether one’s ecological identity is in accordance with the law of ecosystem development.

3.1 Studies of ecosophy

The combing of literature on ecosophy reveals that a wide range of ecosophies has been developed and applied to influence and even regulate the public’s daily behavior. The traditional spectrum of ecosophies includes cornutopianism (the combination of Cornucopia and Utopia), environmentalism, ecofeminism, social ecology, eco-Marxism, and sustainable development (see Garrard 2004). These philosophies are criticized and challenged continually due to the increasing knowledge of nature and ecosystems.

The spectrum of ecosophies coined for ecological discourse analysis is featured for the caring of non-human species and the promotion of harmonious relationships between humans and nature. For instance, the principles of peaceful co-existence, interdependence, and caring about small entities proposed by Steffenson (2007: 16); the ecosophy of “living” illustrated by Stibbe (2015: 14), which aims to treasure different forms of lives and to value environmental limits, social justice, and resilience; the ecosophy of “diversity and harmony, interaction and co-existence” advanced by He and Wei (2018b) for the study of international ecological discourse.

The appearance of new norms and rules is the result of constant reflections on the way of resolving the contradiction between human and non-human species. A critical analysis of both traditional and modern ecosophies shows the change of researchers’ positions and attitudes to the relationship between biological organisms and the natural environment where they live, and meanwhile, presents

three distinctive features of ecosophy: individuality, scientific, and historical attributes (Lei and Miao 2020).

The individual characteristic refers to the fact that ecosophy is often formed or selected by individuals based on their own personal experiences in nature rather than a collective consciousness possessed by all citizens. The selection of one specific ecosophy is the result of critical review of relevant literature and scientific experiments which reflect a person's free will. Furthermore, the formation of an ecosophy is a comprehensive process in which both historical factors and recent ecological progress are taken into consideration.

A critical review of ecosophy studies unveils a prevailing trend that eastern philosophies, especially classical Chinese philosophy, have a strong influence on individuals' understanding of nature. Huang (2016) argued that the pursuit of the unity between man and nature should be applied to ecological discourse analysis with the purpose of promoting harmonious discourse and ecological identities. He further explained the role of Chinese philosophy in the building of harmonious discourse analysis (Huang 2018). The same emphasis on the impact of Chinese ancient ecosophy on ecolinguistics is also found in studies made by He and Zhang (2017), Huang and Zhao (2021), Wei (2021), Zhang and He (2020), and Zhou (2017).

Influenced by both western and eastern philosophies on the relationship between human and nature, the ecosophy coined for this research can be described as 'holism' which treats numerous organisms living on the planet as a whole community. The change of any life form is influential to others. Based on the ecosophy of holism, the author attempts to classify ecological identities constructed by texts into different types and propose a framework for the study of ecological identity from the perspective of SFL.

3.2 Classifying ecological identity

Considering the interdependent relationship among language, minds, and identity, the author defined ecological identity in this paper as a discursively constructed image of who we are when we interact with nature. This definition has borrowed the view of social constructionism and agreed that ecological identity is formed in the process of social interaction. Different from the definition drawn from the perspective of sociopsychology, the linguistic understandings of ecological identity regard the discursive practice as a particular form of social practice. Discourse, according to Stibbe (2010), is central to the third wave of ecolinguistically significant globalization.

Compared with the comprehensive survey of identity in different dimensions and settings, work on ecological identity remains to be further expanded.

Although the criteria of judging one’s ecological identity are less evident than national or gender aspects of self, the intrinsic feature of ecological identity is reflected in its positive, destructive, or ambivalent influence on the healthy development of ecosystems, because of which, the relationship between discourses and ecosystems is expounded in Stibbe’s work (2014) in which discourses are tagged with positive, destructive, and ambivalent according to their effects on the normal running of ecosystems (see Figure 1).

Figure 1: Classifications of ecological identity.

Ecologically positive discourses, also named beneficial discourses are those which are consistent with principles or values of scientific ecosophies. The role of these texts is to enlighten the public about the rules of nature and the encouraging ways of living in nature. Despite the dearth of beneficial discourses, they are significant for the improvement of ecological crises. Hence, the exploration and advocacy of beneficial discourses, according to Stibbe (2015), is one of the main objectives in ecolinguistic studies.

Destructive discourses, on the contrary, are those which construe ecosophies against the laws of nature (Stibbe 2014). People are normally surrounded by such kinds of discourses, which have resulted in the deterioration of the natural environment and a global imbalance of ecosystems. To alleviate the negative effects of destructive discourses, Goatly (2002) suggested raising the public’s critical language awareness through exposing the ecologically damaging ideologies embedded in texts of various genres and offering positive stories for them to cultivate scientific ecological values.

Apart from the positive and destructive discourses, there are ambivalent discourses that are seemingly beneficial and follow the principles of scientific ecosophy, but, actually, fail to cause fundamental change to ecological status (Stibbe 2014). The discussion of ecological issues in ambivalent discourses is superficial

and focuses mainly on technical improvement rather than the hidden ideology or the unharmonious ecological relations. Hence, ambivalent discourses are remained to be modified so that they can be beneficial to the improvement of the relationship between human and non-human species.

Since ecological identity is interpreted as a discursively constructed image, the division of positive, destructive, and ambivalent discourses contributes to the construal of corresponding identities (see Figure 1). The principle of making such divisions of discourses is also suitable for the classification of ecological identities on account of the interdependent relationship among language, species, and nature.

Positive ecological identities are generally found in literature especially in nature writings. Relevant work can be seen in the analysis of Native American literature (Bringhurst 2008), the study of Wordsworth's poem (Goatly 2018), and the exploration of Rachel Carson's writing (Stibbe 2012). The active seeking of such beneficial stories makes it possible to construct positive ecological identities among the public and to resist the damaging influence of negative ecological values.

Destructive ecological identities originate mostly in destructive discourses exemplified in texts of business issues. Stibbe (2003) revealed the negative influence brought by intensive farming on the healthy development of ecosystems. The same work of criticizing the irresponsible attitude and behavior of transnational corporations to the natural environment is also found in Alexander's research (2009) on speeches made by trading magnates and politicians. The exposure of such destructive ecological identities functions to awake civilians from the lies of nature saboteurs.

Ambivalent ecological identities are built in texts of various genres even in discourses of environmental protection, because of which, ecolinguistic studies are conducted to criticize their adverse effects and advocate beneficial ones. Compared with positive and destructive ecological identities, the detection of ambivalent identities required more strategies and practice. The misleading values indicated by such identities are fatal to the normal running of ecosystems and even hinder the public from receiving scientific and positive understandings of the relationship between human beings and natural issues.

In addition to the interrelationship of discourses and ecological identities, Figure 1 demonstrates their relations to ecosystems. It is seen that both discourse and ecological identities can act on the operation of ecosystems. These three items form a triangle relation and the main criterion of assessing the property of influences exerted by discourses and ecological identities on ecosystems in Figure 1 resides in the ecosystem held by discourse analysts.

4 A proposed framework for the study of ecological identity from systemic functional linguistics

Since studies of ecological identity from the perspective of sociopsychology are criticized for the ignorance of discourse power and linguistic expressions in the construal of one's image interrelated with natural issues, the arising of ecolinguistic research on ecological identity is thus regarded as an effective supplement to previous work for its emphasis on the role of language in constructing and reflecting people's identity. Nevertheless, current analyses of ecological identity made in ecolinguistics fail to illustrate the working mechanism of how lexicogrammatical resources can be applied strategically to the construction of one's identity in dealing with the relationship between human and non-human species, hence the need for a theoretical framework.

4.1 Theoretical bases

The theoretical basis of designing a framework for the study of ecological identity in this research is SFL, a holistic theory of language in context (Halliday 1994). Developed in the 1950s, SFL is selected as the theoretical source of this framework due to three reasons: the powerful description ability of functional grammar, the adoption of social constructionism, and the evolution of SFL as applicable linguistics. Details of these characteristics are presented in the following:

In SFL, the comprehensive descriptions of language systems, also known as functional grammar, emphasize paradigmatic order referring to what is chosen instead of others. The defining features of language, according to functional grammar are stratification, realization, and metafunctions respectively. Stratification means language consists of different levels or strata which are normally phonetics, phonology, lexicogrammar, semantics, and context. It is about how functional linguists perceive language and explain the working mechanism of language. The relationship across the levels of abstraction from phonetics to context is called realization (Halliday and Matthiessen 2014).

Metafunctions of language in SFL are described as ideational, interpersonal, and textural (Halliday 1994). Ideational metafunction is embedded in the construal of human experience into meaning; interpersonal metafunction refers to the use of language in establishing and maintaining appropriate social relationships among people of different communities; textual metafunction is about the construction of

texts, that is to build up sequences of discourse, organize discursive flow, and create cohesion and continuity in discourse.

The defining features and the three metafunctions of language that characterize SFL serve the need of discourse analysts in dissecting linguistic features which are manipulated in constructing individuals or groups' ecological identities. They are also efficacious in explaining the guiding role of ecological identities to one's behavior in environment and attitudes towards natural entities.

Reflections of social constructionist view in SFL are found in the explanation of the relationship between language and environment. Linguistic signs, according to Halliday (1978), are endowed with meaning in the context of the interaction between an individual and his or her human environment including both social and physical levels. Ecological identity, on the other hand, is formed in the same process of human's interactions with nature, but can be manifested as diverse semiotic modalities. The social constructionist property of SFL has made it possible to examine ecological identity through linguistic systems.

The development of SFL is characterized as applicable linguistics (Matthiessen 2012), for the functional approach to language has the potential to solve problems generated from different communities including environmental issues. Both SFL and applicable linguistics are considered as socially accountable (Halliday 1978). The theoretical and descriptive power of SFL can be ingeniously employed in the analysis of human's ecological identity and thus provides effective measures to the resolution of environmental crises.

The premise of probing ecological identity from the perspective of SFL is to recognize that language plays a key role in the construal of one's experience about nature. As Halliday (1996) put forward, among all semiotic modalities, language is simultaneously a part of reality, a construer of reality, and a metaphor for reality, the linguistic construal of environmental reality contributes to the formation and reflections of ecological identity.

4.2 An SFL-based framework

The brief introduction of SFL and the analysis of its prominent features in the above part has proved the possibility of constructing an SFL-based framework for the study of individuals or groups' ecological identities built in different types of social practice. Based on the strata of grammar, discourse, and society proposed by Martin and Rose (2003) for discourse analysis in SFL, the author designed a framework (see Figure 2) to probe the working organism of ecological identity formed in social interactions.

Figure 2: An SFL-based framework.

The left three circles in Figure 2 represent the stratification feature of language emphasized in SFL, in the light of which the level of discourse interacts with the level of social activity and the level of grammar interacts with the level of discourse. These three strata are complementary in interpreting various social phenomena including nature and environment-related social issues. Thus, they lay the foundation of exploring ecological identities from the perspective of SFL.

The dotted lines in Figure 2 indicate three mapping processes from grammar, discourse, and social activity to lexicogrammatical patterns, discursive strategies, and ecological identity respectively, which constitute the right part of the framework. The strata of grammar, discourse, and social activity serve as the cornerstone of this framework, from which lexicogrammatical patterns, discursive strategies, and ecological identity are evolved and instantiated.

Lexicogrammatical patterns lying in the right bottom of Figure 2 are regarded as the engine-room of the whole process of constructing ecological identities since they furnish lavish resources for language users to construe social practice related to nature. These patterns are commonly exemplified as nominalization, ergativity, passive voice, and particular choices of agency in different genres of discourse. The strategic use of lexicogrammatical patterns is considered as the key procedure in the process of constructing one's ecological identity.

Discursive strategies located in the middle level of Figure 2 fulfill the function of connecting levels of lexicogrammatical patterns and ecological identity organically. Admitting the fact that the use of strategies in discourse practice interrelates with linguistic features, this research defines discursive strategies as intentionally designed mediums to achieve specific goals of meaning-making in different contexts through applying lexicogrammatical patterns. They are, according to Wodak (2001), central in establishing and sustaining social identities and inequalities. The specific choice of discursive strategies is indispensable to the construction of one's ecological identities accordingly.

The range of strategies listed in Figure 2 includes rhetoric, evaluation, justification, categorization, and transference. They are not mutually exclusive.

Instead, these strategies are often combined to construct who the reader is when he or she is concerned with environmental problems. The relationship among the five strategies is that of conjunction. Details of these strategies and their working mechanism will be further discussed in Section 4.3 together with the use of corresponding lexicogrammatical patterns.

At the right top level of the framework is ecological identity constructed by and manifested in sorts of social activities. According to the discourse analyst's ecology, ecological identity is further classified into positive, destructive, and ambivalent types. Positive ecological identity is embodied in respecting and loving nature; destructive ecological identity is reflected in the over exploration of nature and the sacrifice of environment for the maximization of economic benefits; ambivalent ecological identity often appears in disguise, which requires more effort in revealing and criticizing its negative effects on the healthy running of ecosystems. The three types of ecological identities are all constructed by applying relevant discursive strategies and lexicogrammatical patterns.

4.3 Discursive strategies

Discursive strategies, according to Reisigl and Wodak (2001), are designed to achieve certain psychological, social, and political aims. In this study of ecological identities, strategies are defined as the intentional use of lexicogrammatical resources to construe identities of positive, ambivalent, and negative attributes. Based on the purpose of exploring the discursive construction of ecological identities, the author put forward five strategies: rhetoric, evaluation, categorization, justification, and transference, which are further refined into different subtypes (see Figure 3).

The rhetorical strategy contains anthropomorphism, grammatical metaphor, metonymy, synecdoche, and format. The strategy of evaluation can be further divided into positive and negative based on the meaning of the appraisal language. The strategy of categorization acts on the building of alignment or exclusion from a certain ecological identity.

As for the strategy of justification, the source can be either knowledge originated from one's experience, personal observation, and education, or authority from experts, theories, and institutions. The strategy of transference is applied to present the idea of some third party in the process of building one's ecological identity. When the inserted party is a nation, the formed relation can be alliance or opposition. However, when the newly introduced voice comes from a political party, the attitude can be either supportive or condemning. The square brackets stand for 'or' and the curly brackets for 'and' in Figure 3.

Figure 3: The spectrum of discursive strategies.

The employment of rhetorical strategies is frequently seen in discourses of poetry, narration, media reports, advertisements, and so on, in which natural entities from non-human animals to plants are described from the perspective of human beings. Linguistic analyses of such descriptions are considered as an important avenue for the investigation of one’s ecological identities and the study of human and animal relations (Autti 2017). For instance, the agency of wolves and wolverines is often represented by using threatening terms, which to some extent, leads to the intensification of contradictions between human and non-human species. The preference of rhetoric directly reflects human’s attitude towards animals and thus manifests their ecological identities.

The evaluation strategy refers to the intentional use of appraisal language which has been systematically described by Martin and White (2005). As Clayton and Opotow (2003) figured out that identity was the result of social evaluation, the study of appraisal language employed by people when he or she expresses his or her attitude and views on nature-related issues is inevitable for the exploration of one’s ecological identity. Although the meaning of evaluation can be realized via different configurations of attitudinal, graduation, and engagement parameters, it is generally divided into positive and negative subtypes.

The strategy of categorization means the distinction between one type of ecological identity and others based on the shared values, beliefs, styles of living, and experiences in nature. Work on the application of categorizing strategies in identity studies is seen in Duszak (2002), Lean and Lee (2008), and Li and Ran (2016). The function of categorization in constructing ecological identity is reflected in that individuals are clear about their membership and the membership of others when they are dealing with natural issues. Pronouns like ‘we’ are employed to indicate the insider and outsider relationship among people with different social and political backgrounds.

The strategy of justification in this study refers to the action of justifying a nature-related value, belief, or lifestyle manifested by a specific ecological identity through one’s knowledge or the power of authorities. The concept is first seen in Wodak et al. (2009), in which the emphasis is put on the legitimacy of past experiences about nationality. However, the focus and means of realizing justification in the construction of ecological identity are different from that of national identity.

Strategies of transference aim to divert the public’s attention from environmental crises to some uncorrelated political and international issues. Although solutions to ecological problems are closely intertwined with social and political factors, the identity built through transference strategy is not conducive to achieving domestic and international consensus in terms of easing the contradiction between man and nature. The practice of transformation is to avoid discussing issues that threaten human survival and maintain the original ecologically destructive behavior and lifestyle.

The working mechanism of discursive strategies illustrated above will be further explained through examples in the following parts. The data involved in sample analysis include the transcription of a nature documentary called *The Blue Planet II*, and comments on a news report, “Five takeaways from The Post’s analysis of warming climates in the United States”,¹ published in *The Washington Post*.

The Blue Planet II was produced by British Broadcasting Cooperation (BBC) in 2017. It was regarded as a representative of the blue-chip documentary, which was characterized by shooting large animals, removing human’s influence, and composing dramatic stories of violence. The natural entities recorded in “The Blue Planet II” were mainly marine animals, aquatic plants, and marine landscapes.

The article, “Five takeaways from The Post’s analysis of warming climates in the United States”, was written by Chris Mooney on August 13th, 2019. The

1 <https://www.washingtonpost.com/climate-environment/2019/08/13/five-takeaways-posts-analysis-warming-climates-united-states/> (accessed August 13th, 2019).

journalist is responsible for the news column on climate change, energy, and the environment. The news report presented five findings, such as uneven warming, the existence of clear large regions, and robust warming signals, about the change of temperature in America from 1895 to 2019.²

Example data chosen for this study are cataloged by a tag consisting of two letters and numbers, which are BP1, BP2, BP3, BP7, CO8, CO21, and CO47. The two letters, BP, refer to the transcription of *The Blue Planet II*, and CO represents comments on the news report. The number after BP and CO gives information about the sequence of episodes and comments respectively. The participants in the sample data are marked in italic font. The type of process is bolded, while the circumstances are underlined.

4.3.1 Rhetorical devices

Among the wide range of rhetorical devices (see Figure 3), the use of anthropomorphic language to construe one's ecological identity through representing the relationship between human and non-human animals is frequently seen in discourses of various genres. Anthropomorphism refers to the projection of human qualities and subjectivity onto non-human species so that they can have human-like features, intention, emotion, thoughts, and behavior.

The appearance of anthropomorphism can be dated back to the Renaissance, after which the concept is applied to a wide range of fields relating the human body to the body of the world. The rapid spread of anthropomorphic expressions even leads to a fundamentally anthropomorphic way of thinking in natural and social sciences (Weemans and Prévost 2014). From the late nineteenth century, the practice of using anthropomorphic items has been resisted due to the lack of clear evidence in explaining scientific phenomena. The agreement and disagreement about the application of anthropomorphism still coexist today.

The role of anthropomorphic language in constructing one's ecological identity is mainly realized in the ascription of human agency to non-human species through using specific lexicogrammatical patterns. The ascribed animals' agency is reflected in their cognitive abilities; for instance, animals can express their intention and use strategies for living. Furthermore, animals presented by anthropomorphic grammar have their emotions, characters, and the need for reproduction and social communication. For example:

2 <https://www.washingtonpost.com/climate-environment/2019/08/13/five-takeaways-postsanalysis-warming-climates-united-states/> (accessed August 13th, 2019).

- (1) Like most squid, they’re voracious hunters. [...] They **found** a shoal of lanternfish **hiding** 800 m down, off the coast of South America. Their tentacles are armed with powerful suckers with which they **grab** their prey. And when there are no more lanternfish to be found, they **turn on** each other. This squid has **caught** a smaller one in its tentacles. To **hide** its capture from the rest, it **releases** a smokescreen of black ink. But then, an even bigger one **challenges** it and **steals** its catch. (BP2)

The description of animals in Example (1), the leading roles, squids, are endowed with the cognitive ability of thinking and designing through applying anthropomorphic language which can be analyzed as in Table 1. The transitivity analysis of the example shows that both the Actor of material processes and the affected role of Goal are realized by animals, through which the production team of the nature documentary has built a parallel world of animals which shares no difference from the world of human beings. The interaction among squids described in the example is familiar to the audience for such scenes also take place in people’s daily life. Hence, the use of anthropomorphic language has promoted the position of non-human animals to the equal status of human beings.

Table 1: Transitivity analysis of anthropomorphic strategy.

Actor	Process: material	Goal	Circumstance
Squids	Found	Lanternfish	
(lanternfish)	Hiding		800 m down
They (squids)	Grab	Their pray	With suckers
They (squids)	Turn on	Each other (squids)	
This squid	Has caught	Smaller one (squid)	In its tentacles
(squid)	To hide	Capture (squid)	From the rest
It (squid)	Releases	Black inn	
Bigger one (squid)	Challenges	It (small squid)	
Bigger one (squid)	Steals	Its catch (smaller squid)	

The ecological identity constructed through employing anthropomorphic strategy in the extract from *The Blue Planet* movies can be regarded as animal’s observer whose mission is to report what has happened in the ocean from the perspective of a third party. The positive side of this identity is the emphasis on animals’ initiative and the construal of a parallel world between human and non-human species. It has broken through the traditional concept which believes human is superior to other animals. The negative property of being an animals’ observer, on the other hand, resides in the misleading description of a false hallucination of biodiversity. The perfect order of life portrayed in the extract is contradictory to the actual ocean crisis.

In addition to anthropomorphic language, a key interest of studying rhetorical devices is the use of grammatical metaphor during the process of constructing one's ecological identity. Grammatical metaphor, according to Halliday and Matthiessen (2004), refers to the variation in the use of words. In SFL, the "single most powerful resource for creating grammatical metaphor" (Halliday 1994: 352) is nominalization which is to reword congruent processes and properties metaphorically as nouns. The device of nominalization is frequently applied to describe animals and thus reflects one's ecological identity. For example:

- (2) The seal is alerted by the noise, and through the mass of bubbles, it **makes** *its attack*. Almost invariably, it **makes a kill**. (BP1)
- (3) The family of bottlenose dolphins are resting on the reef after a night's feeding offshore. (BP3)

In Example (2), grammatical metaphors are employed in the two material clauses, "it makes its attack", and "it makes a kill". The Process is realized by the neutral verb, "make", while the Goal is realized by two nouns, "attack", and "kill", which have negative connotations. In the metaphorical expressions, the targets of attacking and killing are neglected, which on the other hand weakens the massacre between animals. The congruent expression should be "it attacks (some species)", and "it kills (some species)".

In Example (3), the expression, "feeding", in the circumstance, "after a night's feeding offshore", is an example of nominalization. The congruent way should be "after they feed (some species) offshore for a night". The use of nominalization functions to hide the cruelty of fighting among animals. As Halliday (1978, 1985) put forward, when nominalization is used in scientific and technical registers, it acts to construct the hierarchies of technical terms and to mark off experts from the uninitiated, the choice of nominalization in the above examples also forms a hierarchy in the animal world.

Although the author recognizes the existence of hierarchical differences between species from an evolutionary point of view, they are equally important for the normal running of ecosystems regardless of size and other factors. The concealing of large animals' cruel hunting behavior and the ignorance of small animals' existence construed in the two examples have strengthened the destructive identity that only predators deserve to live on this planet while small and weak animals are born prey. When this value of advocating violence and hierarchical plunder is applied to human society by the audience of this movie, the ecological crisis and the contradiction between man and nature will never be solved.

4.3.2 The strategy of evaluation

The specific analysis of evaluation strategy refers to the theory proposed by Martin and White (2005) in which appraisal language is further studied from the perspective of discourse semantics. According to them, the language of evaluation includes expressions of attitude which are further analyzed as affect, judgement, and appreciation, the way through which attitudinal resources can be amplified and hedged, that is to adjust the degree of graduation, and the source of expressing attitude also called the domain of engagement. The following example consists of many appraisal lexicogrammatical resources which are thoroughly arranged to construct the author’s ecological identity.

- (4) In the course of making Blue Planet II, we’ve explored every corner of the underwater world. We’ve encountered extraordinary animals, and discovered new insights into how life is lived beneath the waves. For years we thought that the oceans were so vast and the inhabitants so infinitely numerous that nothing we could do could have an effect upon them. But now we know that was wrong. The oceans are under threat now as never before in human history. In this final episode, we will meet the pioneers who are striving to turn things around. People who are helping to save the ocean’s most vulnerable inhabitants and dedicating their lives to protecting the seas. (BP7)

Example (4) is full of appraisal meanings construed by words like “every”, “new”, “vast”, “numerous”, and “wrong”. The evaluative expressions can be further categorized into attitude, engagement, and graduation resources based on appraisal theory (Martin and White 2005). A systematic analysis of appraisal meaning represented in the example is seen in Table 2.

Table 2: Appraisal analysis of Example (4).

Appraised	Appraising items	
	Low degree	High degree
Exploring activity		Every corner
Animals		Extraordinary
Insights	New	
Ocean		So vast
Inhabitants		So infinitively
Previous thought	Wrong	numerous
Inhabitants		Most vulnerable

It is seen in Table 2 that the attitudinal lexicogrammatical resources selected to evaluate marine animals fall into two different types. The first type refers to the appraisal meaning expressed by “extraordinary” and “numerous”, which is generally regarded as positive. The second type of appraisal meaning is represented by “vulnerable”, which is considered as negative.

The positive evaluation of marine animals explains why human beings never stop exploring marine resources because they are advertised as “extraordinary”, and “numerable”. Hence, the ecological identity constructed accordingly is anthropocentrism. However, when marine animals are described as “the most vulnerable”, people will show compassion for them and the public’s consciousness of protecting animals will be activated. The ecological identity constructed is positive.

The construal of the two different ecological identities is also reflected in the system of graduation. In Table 2, the language employed to evaluate human’s exploring activity and marine animals is adjusted to a high degree in terms of graduation. The semantics of graduation, according to Martin and White (2005), is the key factor in the appraisal system. The selection of pre-modification, “every”, “so”, and “so infinitively”, has intensified the positive attitudinal meaning attached to exploring activity and natural entities, which in turn contributes to the construction of the identity, anthropocentrism. Meanwhile, the use of maximization, “the most vulnerable”, showing the highest possible intensity, functions to underline the necessity of protecting animals and thus construe a positive ecological identity.

Apart from the analysis of attitudinal and gradational systems, the working of evaluation strategy is seen in the system of engagement. In the example, the relationships of denying and countering are realized through the conjunction, “but”, and the adverb, “never”, respectively. The contracting type of the engagement system has shown a comparison between two different ecological identities, one is owned by “we”, the other is possessed by “the pioneer”. The use of pronoun, “we”, acts to align the author with the audience in that both share the identity of anthropocentrism, while the positive ecological identity of “pioneer” is seen in the attributive clause, “who are thriving to turn things around”. The relationship between insider and outsider is further illuminated in the next part, the strategy of categorization.

4.3.3 The strategy of categorization

Categorization refers to the act of discriminating one ecological identity from others. It is often realized via using pronouns and nouns which function to indicate some specific identities (Helmbrecht 2002). The strategy of categorization in this research is further divided into subtypes of insider and outsider in accordance with

the speaker's idea that he or she chooses to classify himself or herself into the same category as the hearer. For example:

- (5) The map helps *me* understand why *some people* are still *climate deniers*. *I've* been watching climate change in action as seasons are changing. Meanwhile, *others* haven't seen anything. And if *you* don't have friends and relatives in the affected areas to explain what is happening, it flies over *your head* as anything to worry about. (CO8)

Example (5) is a comment on a news report about climate change. The participants in it are realized mostly by pronouns such as “me”, “I”, and “others”. These pronouns function to realize the strategy of categorization and to further construe a triple identity manifested in Figure 4.

Figure 4: A triple identity.

The first ecological identity manifested in Figure 4 is represented by the pronoun, “me”, referring to the reader himself who has paid attention to climate change for a long time. He admitted the existence of global warming and worried about it. The second ecological identity, “climate deniers”, is the opposite of the speaker for the denial of the climate crisis. The third ecological identity, “you”, neither admits nor denies the existence of climate issues. People with this identity are indifferent to global warming and have no worries or concerns about the survival crisis of mankind.

4.3.4 The strategy of justification

The strategy of justification attempts to clarify why a particular ecological identity is chosen by the speaker or hearer. The reason is often related to either one's knowledge about natural issues or authoritative research on ecological problems. The source of one's knowledge is usually his or her personal experience in nature, daily observation of natural entities, and education about the surrounding environment. Besides, people tend to draw support from authoritative points of view or theories given by relevant experts or institutions. For example:

- (6) I've been following the IPCC's reports since 1995 and teaching world politics for 2 decades. As *James Hansen at U Colorado* put it long ago, climate change isn't best characterized as just global warming, it's also global weirding [...] I'm getting old now, but glad I don't have children, given the greed that has led our world's capitalist and technocratic institutions to embrace near-term polluting over sustainable growth. (CO21)

In Example (6), the reader recounts his personal experience and observation of climate change, through which he justified that he was not born with the ecological identity of protecting nature, but rather develops gradually under the influence of education and social practices. The long-term reading accumulation and the perception of the surrounding environment have made the speaker realize the risk of global warming and thus reconstruct his cognition of environmental issues.

In addition to the reader's knowledge, the authoritative expert, "James Hansen at U Colorado", holds the same view in admitting the serious consequences of global warming. The application of the justification strategy in the example has successfully constructed an ecological identity which who cares about climate change and distinguishes himself from capitalist and technocratic institutions, who pursue the maximization of economic benefits at the expense of the environment.

4.3.5 The strategy of transference

The strategy of transference employed to construct one's ecological identity aims to distract the reader or hearer's attention from the current serious discussion on ecological issues through inserting a new agency which is either a nation or a political party. When the newly appeared agency is a nation, the speaker under the guidance of a particular ecological identity will build an alliance or an opposition. Similarly, when the inserted agency is a political party, the speaker will either support or blame the party's opinions on environmental issues. For example:

- (7) This [global warming] must be wrong. The WP must be wrong. All the scientists worldwide must be wrong. All their analysis and data must be wrong. President Flim-flam and the extremist Republican "Ignorance is bliss" Party have assured us: global warming is a flake. (CO47)

In Example (7), the commentator shows his attitude towards the topic of the news report, "global warming", through negative evaluation realized by the Attribute, "wrong". This attitude of denying global warming is further strengthened by the rhetoric device of repetition, "[...] must be wrong". The negated Carrier is

represented by “this (global warming)”, “the WP (Washington Post)”, “all the scientists”, and “all their analysis and data” respectively. These entities are deliberately chosen for they are closely connected to the spread and research of global warming.

After this negation, the commentator explains his view on global warming by introducing the Republican Party. From the Process of assuring, it is known that the speaker’s negation of global warming originates from the political party. However, his attitude towards the party is also negative judging from the metaphorical expression “President Flim-flam” and “Republican ‘Ignorance is bliss’ Party”. Thus, the previous denying of global warming and the negative description of the inserted agency, the Republican Party, have achieved the effect of sarcasm.

The strategy of transference applied in Example (7) works on distracting the public’s attention from the discussion of global warming to blame the practice of a political party. For the commentator, the problem of global warming should be investigated from the perspective of politics, while the citizen’s responsibility for nature is largely ignored.

5 Conclusion

Ecological identity is not formed innately like gender and nationality but rather constructed dynamically in discourses. As a special and newly appeared dimension of identity studies, it reflects people’s attitude towards nature-related issues and their reactions to the ecological crisis. This research made a classification of different ecological identities according to their impact on nature and the ecology of holism advocated by the author. Furthermore, based on the theories of SFL, the researcher proposed a framework to explain the working mechanism of ecological identity discursively constructed in texts of various types. The design of the framework is intended to facilitate the encouragement of positive ecological identity, the promotion of ambivalent identity, and the exposure of destructive ones, although it still needs to be further polished.

Acknowledgments: This research is conducted with the help of Professor Xingwei Miao from Beijing Normal University and the encouragement of Professor Wei He from Beijing Foreign Studies University. A deep sense of gratitude is expressed to them and the anonymous reviewers for their valuable comments and suggestions.

Research funding: This work was supported by Beijing Institute of Technology Research Fund Program for Young Scholars.

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