

Insects as Food or Friends? American News on Edible Insects as a Mirror

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Abstract: News reports on edible insects to a large extent influence the non-entomophagous group and convey certain ecological ideologies. This study focuses on the ecological ideologies embedded in American media concerning edible insects and their impacts on human-insect sustainable relationship. An ecocritical discourse analysis means based on transitivity system of clauses is adopted to analyze 34 articles from New York Daily News, USA Today, Washington Post and CNN. The analysis of transitivity reveals that American news on edible insects are inundated with ecologically ambivalent processes and destructive processes. Even though “entomophagy” is considered a sustainable behavior, American news tend to shape insects as resources with nutritional and economic values, and regard eating insects as a means to alleviate food shortages, while ignoring the vitality of insects as natural beings or human’s friends.

Keywords: Ecolinguistics, Critical discourse analysis, News discourse, transitivity, Edible insect, Sustainability.

1. Introduction

Historically speaking, people in many developing countries eat insects as a regular part of their diet, a practice known as entomophagy [1]. But in most western countries, people view entomophagy with feelings of abhorrence [2]. Nowadays, with the rapid growth of the world’s population, the demand for protein is increasing gradually, and mounting countries, researchers as well as enterprises have to shift their attention from milk, eggs, fish, meat and other conventional protein foods to insects [3]. Besides, with the increasing awareness of food shortage as well as the innovative trend of insect food to substitute animal-meat consumption, especially after the publication of *Edible Insects: Future Prospects for Food and Feed Security* [4], there is an increasing proportion of publication and reports on edible insect. To this extent, American media has joined the campaign to promote edible insects to change American dietary habit. During this process, the media acts as a stimulus to communicate particular ideologies in the name of providing information on edible insects to the public [5-6]. However, media can transform facticity patterns for the sake of sensationalism or to fit in with the prevailing ideology [7], and the linguistic features embedded in media discourse combine together to convey ecological ideology about the world. Therefore, it is necessary to uncover ecological stories hidden in media coverage on edible insects through interpreting patterns in the way that language is used within the texts from the ecocritical perspective. And the feature of interest in this article is transitivity structures of clauses, which is useful when revealing the stories told between the lines of texts [7].

As for the study of transitivity, exiting research has mainly extended from critical discourse analysis to ecocritical discourse analysis. The former focused more on the cultural, political and ideological significance of transitivity structure in media discourse [8]. While the latter paid more attention to the connection and interaction between language and environment reflected in the various processes of transitivity and tried to discover or even criticize the ecologically unsustainable features in media discourse [9-10]. However,

there is no unified research paradigm and framework as to the ecological discourse analysis from the perspective of transitivity and existing research has not placed emphasis on insects, especially edible insects which are equipped with both media value and advertising properties. Therefore, the purpose of this article is to reveal whether edible insect news shows a sustainable human-insect relationship and to promote the development of ecocritical discourse analysis from the perspective of transitivity.

2. Theoretical Framework

The study of transitivity in systematic functional linguistics goes beyond the simple classification of transitivity-object relations in traditional grammar, and regards transitivity as a “semantic system that expresses the function of concepts”, that is, a system of linguistic description of processes and their related participants [11]. Thus, the analysis of transitivity is extended from verbs to clauses, involving the categories of processes expressed by clauses, animate or inanimate participants in processes, and various attributes and environments related to processes and participants [12]. In terms of classification, six process types are divided: material process; mental process; relational process; behavioral process; verbal process; existential process [11]. Furthermore, the corresponding participants for each of the six process were categorized: the main participants of material process are Actor and Goal; the main participants in the psychological process are the Senser and the Phenomenon; those of the relational process are Carrier and Attribute, or Identifier and Identified; that in the behavior process is the Behaver; and the main participants of speech process are Sayer, Verbiage, Receiver and Target; and that in the existential process is Existent [11]. Besides, the types of environmental components are also fully outlined: Extent, Location, Manner, Cause, Contingency, Accompaniment, Role, Matter, Angle [11].

The transitivity system is the expression of experience, which reflects the events, the people and things involved, and the relevant environmental factors such as time and place [13].

In ecological terms, however, the semantic function realized by different process types is the superficial meaning, whose patterns in a text can further “help reveal whether animals are being represented actively as beings who do things and think, feel and sense the world around them, or whether they are erased by being represented merely as objects to which something is done” [7] (pp.154). The criterion of assessment is the ecological philosophy (ecosophy) in mind.

To be specific, ecosophy is “a philosophical word-view or system inspired by the conditions of life in the ecosphere” [14] (pp.38) and “the criterion for the judgment of the ecological orientation of the world language system and discourse” [15] (pp.12). It is a conceptual combination of economy, ecology and philosophy [14] (pp.37). Historically speaking, researchers at home and abroad have proposed some systemic ecosophy. After summarizing the three spectra of ecosophy (the first is from anthropocentric to ecocentric, the second is from neoliberal at one hand to either socialist, localist or anarchist at the other, and the third is from optimistic to pessimistic), Stibbe concluded his ecosophy as “Living!” and explained the one word with 7 aspects: valuing living, wellbeing, now and the future, care, environmental limits, social justice, and resilience [7]. Furthermore, in the Chinese context, there are abundant ecological thoughts in Chinese traditional culture, which have been deeply excavated by Chinese philosophers. China's ecological culture is a kind of humanistic ecology, the best cases in point are the foundation of Taoism referring to the ideal of harmonious coexistence between man and nature, and the model of Confucianism concerning about nature’s role of creating life. Qiao indicated that the Confucian ecosophy can be divided into two parts: thought and practice. The “thought” includes the theory of ecological unity of nature and man, ecological conscience, and ecological realm. “Practice” includes ecological practice norms, laws, decrees, folk customs as well as ecological criticism[16] (pp.13). In the current age, concepts of

“diversity”, “harmonious”, and “co-existence” are advocated to solve the increasingly severe environmental problems and make the related academic analysis[7,15,17]. In such a process, these ecological views can provide a specific standard and direction.

Considering the specific genre of news, cross-cultural background as well as the consuming culture in America, we absorb the traditional Chinese view of ecological “harmonious” by Huang & Zhao [17] and the American view of ecological holism by Stibbe [7] as the analytical ecosophy.

According to Huang & Zhao, the general principles of ecological discourse analysis are: harmony between man and nature, peace with mankind, harmony in society, harmony between ecological and environmental protection, and harmonious coexistence between man and nature[18] (pp.103). On this basis, they further came up with three principles: the principle of conscience(良知原则); the principle of proximity(亲近原则); and the principle of regulation(制约原则). Specifically, the hypothesis in principle of conscience is that “If humans have conscience, they will consider the possible consequences of their language and action for the ecosystem and pay special attention to limits when exploiting resources for economic development”; the idea of “proximity” is a useful one that enables us to identify close or distant relationship between elements in the ecosystem; and the principle of regulation is composed of three layers – self-discipline, local rules, and the laws of society – which differ in formality, authority, and force[19] (pp.10-12).

Therefore, based on transitivity system and the combination of the typical ecological philosophy, we further classified processes of transitivity system into beneficial process, ambivalent process and destructive process by drawing on the framework of He & Wei [12] (shown in Figure 1).

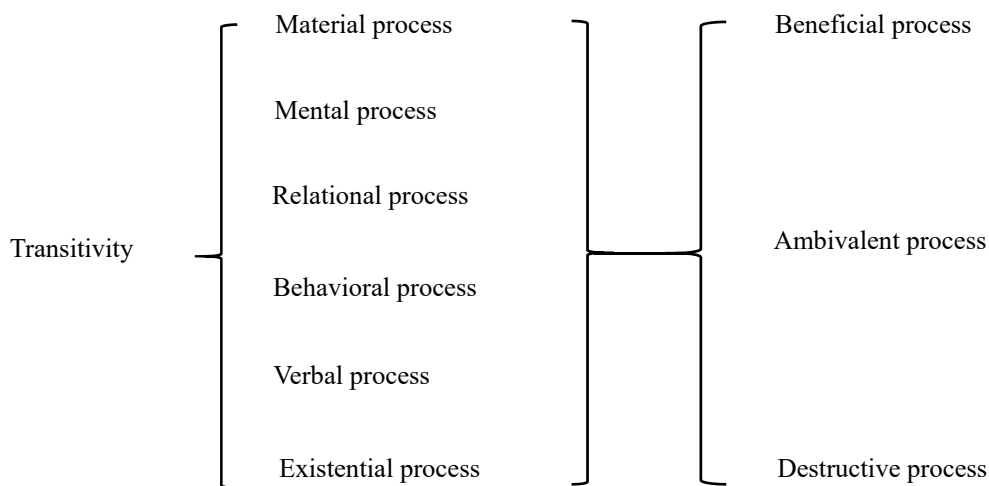


Figure 1. Ecological Properties of Transitivity of Clauses [12]

As shown in Figure 1, discourse can be divided into six processes. Among them, material clauses are clauses of doing or happening, which constructs a quantum of change in the flow of events as taking place through some input of energy; mental clauses are concerned with our experience and consciousness, which constructs a quantum of change in the flow of events taking place in our own consciousness; relational clauses serve to characterize and to identify; behavioral clauses refer to processes of typically human

physiological and psychological behaviors; verbal clauses are more about “Saying”, while the “Sayer” can be anything that puts out a signal; existential clauses represent something exists or happens [11]. Further classification can be conducted according to ecosophy of this paper. Specifically speaking, the beneficial processes support the ecosophy of this paper and can actively encourage people to protect the ecosystems; the ambivalent processes are neutral to the ecosophy; and the destructive processes are inconsistent with our ecosophy,

causing even more ecological damage [7] (pp.24-30). In summary, ecological property is one of the significant attributes in discourse analysis, who “facilitates the transformation of ecological ideas in enormous discourses and provides the theoretical foundation of discourse analysis” [20]. In environmental news discourse, ecological properties not only reflect people’s view on our environment, but affect their actions to the environment.

3. Materials and Methods

This paper is anchored by two research questions as follows: (1): What are transitivity structures of American news discourse on edible insects? (2): What are the ecological ideologies reflected by the transitivity structures of American news discourse on edible insects?

In order to answer the two questions, The New York Daily News (<http://www.nydailynews.com/>), USA Today (<https://www.usatoday.com/>), The Washington Post (<https://www.adn.com/author/the-washington-post/>), and Cable News Network (CNN) (<https://us.cnn.com/>) were chosen as corpus sources since the 4 media are influential in

America. The New York Daily News is the largest mass circulation newspaper in the United States, with one of the largest circulation daily newspapers in the USA. USA Today is the only national folio daily newspaper in color, and in less than two years, its circulation has risen to the third largest in the United States. The Washington Post is the largest and oldest newspaper in Washington. CNN is a television organization with a world class presence, providing round-the-clock news programming via satellite to cable networks and satellite subscribers.

To ensure the consistency and objectivity, we firstly searched “edible insects”; “eat insect” from the official websites of the four news media respectively, covering the period from January 2013 (the year for publishment of Edible Insects: Future Prospects for Food and Feed Security) to December 2021. A total of 36 reports was retrieved. After excluding articles with less than 200 words in the text, 32 foreign media reports were obtained (total 26,683 words). Then we constructed Corpus of American News on Edible Insect (CANEI in short), whose main contents contain titles and main bodies of those news reports.

Table 1. Selected Articles from the New York Daily News, USA Today, The Washington Post and CNN

Serial no	Date	Source	Title
1	May 13, 2013	New York Daily News	U.N. promotes insects as low-fat, high-protein snack to feed the hungry
2	August 25, 2014	New York Daily News	Edible insects a boon to Thailand's farmers
3	July 27, 2016	New York Daily News	Gross but great — cockroach milk could be the next superfood
4	May 13, 2013	USA Today	Some salt with your spider? U.N. says bugs good for you
5	May 11, 2017	USA Today	Bugging out: Culinary Institute serves up crunchy crickets
6	August 16, 2017	USA Today	Bug burgers? Switzerland says insects are what’s for dinner
7	March 16, 2018	USA Today	IKEA test kitchen’s new menu has Swedish meatballs made with mealworms
8	December 21, 2018	USA Today	2019 food trends: Cricket powder, edible insect start-ups spark love for bugs
9	January 23, 2019	USA Today	From crickets to scorpions, why people are eating insects for fun
10	June 12, 2019	USA Today	Bug-based snacks? Crazy ideas from visionaries at the Global Entrepreneurs Summit
11	May 14, 2013	The Washington Post	Insects — a new nutritious ingredient for school lunches?
12	July 13, 2013	The Washington Post	In Mexico, insects infest menus in turn to ancestral dishes
13	April 14, 2014	The Washington Post	If you’re going to follow a paleo diet, you ought to be eating bugs
14	August 20, 2014	The Washington Post	Gateway bug: How crickets could hook America on eating insects
15	May 28, 2015	The Washington Post	Here’s how to talk people into eating more bugs
16	December 1, 2016	The Washington Post	What does the insect industry want? A cricket in every pot.
17	October 31, 2017	The Washington Post	Eating bugs can help the environment. So how do we get past the ick factor?
18	January 9, 2019	The Washington Post	Would you eat insects to help save the planet? These companies are betting yes.
19	May 6, 2021	The Washington Post	Can you eat cicadas? Yes, and here’s the best way to catch, cook and snack on them
20	July 23, 2013	CNN	This energy bar gets its kick from ... crickets
21	August 15, 2013	CNN	This appliance makes gourmet meals out of maggots
22	November 26, 2013	CNN	How do you feed the world without starving the planet?
23	November 6, 2014	CNN	Crickets, grubs and bugs: Will insects be the next Thai food phenomenon?
24	June 30, 2015	CNN	This milkshake is made with 96 crickets
25	July 27, 2015	CNN	Centipede vodka and fried crickets: Is this the future of food?
26	October 2, 2015	CNN	Two Degrees: Does eating bugs help fight climate change?
27	March 26 2017	CNN	Eating bugs: A traveler’s guide
28	October 2, 2018	CNN	Yum! Insect food as a luxury brand might lure Westerners
29	May 2, 2019	CNN	To feed the world, begin with maggot sausage and insect ice cream, scientist says
30	July 25, 2019	CNN	This luxury ice cream is made from insects
31	August 12, 2019	CNN	Insect-only eatery aims to make bugs palatable
32	October 25, 2019	CNN	The food that can feed, and maybe save, the planet: Bugs

Then a qualitative analysis was conducted by following the

framework of “Ecological Properties of Transitivity of

Clauses” which emphasizes transitivity system and its ecological features. The collected corpus was coded with the tool of Macro function in Microsoft Word, which was also used to record the ratio of process types in news. The twice coding was conducted independently for each item with an interval of two weeks. After comparing the coding results, a third party was asked to discuss the differences to achieve the final unification. According to the coded data, features of the processes and corresponding ecological properties were presented for better analysis.

4. Results

4.1. Transitivity Structure of Clauses in American Edible Insect News

The edible insect news is analyzed based on transitivity system and the ratio of each process type is statistically presented in Figure 2:

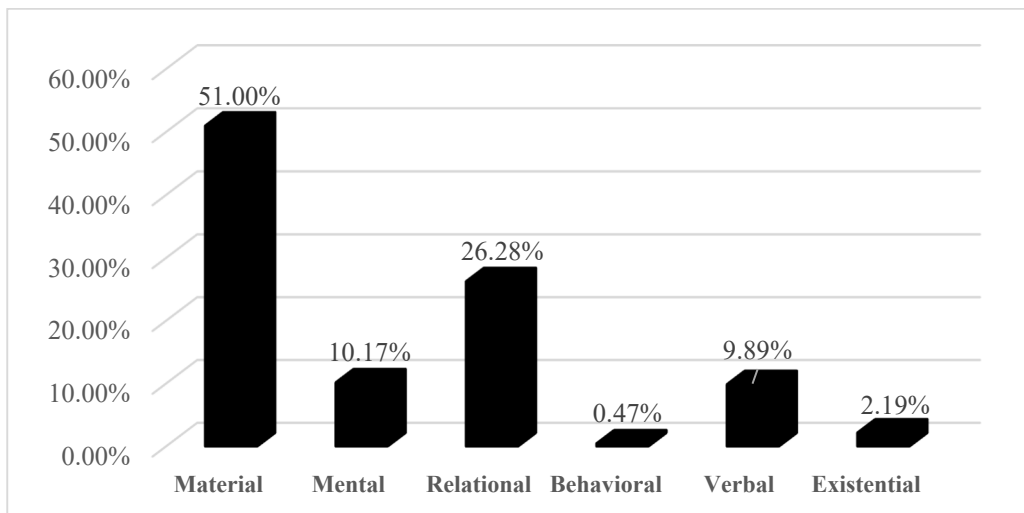


Figure 2. Process Types of Clauses by Presentation.

In 32 American news on edible insects, there are 3,193 procedural clauses. The graph demonstrates that material processes account for the biggest percentage (51%). At 26.28%, relational processes make up the next-largest portion. Verbal processes (9.89%) come in fourth place, closely behind mental processes (10.17%). However, with only 2.19% and 0.47%, respectively, of the total, existential processes and behavioral processes represent a rare proportion. These statistical findings resemble Jiang and Yang's research in certain ways[21]. In realizing a specific semantic function, such processes reveal certain ecological ideologies, which often have an impact on how we see the environment and how

we construct our behavior [17]. The deep influence will be further discussed in this essay from an ecological standpoint.

4.2. Ecological Property of Transitivity Structures in American Edible Insect News

According to the research framework in Figure 1 and from the perspective of ecosophy, this paper carries out an ecological extension on the transitivity structure in American edible insect news, and makes statistics on the ecological properties of processes (see Figure 3), so as to reveal the underlying ecological orientation.

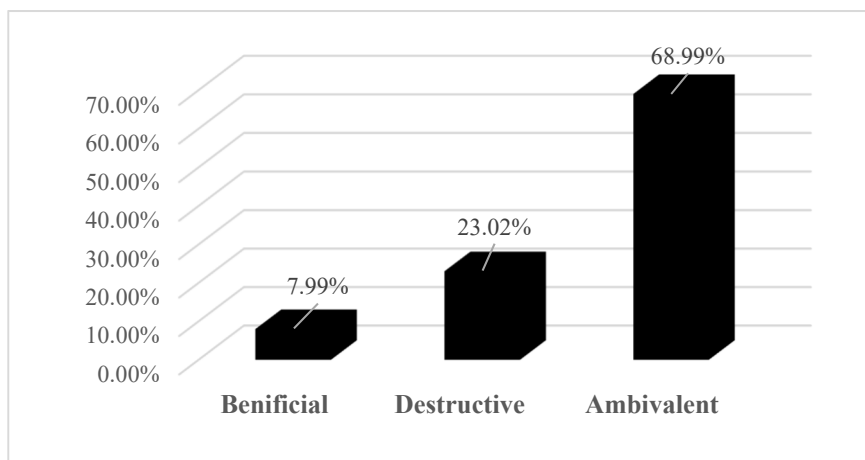


Figure 3. Ecological Properties of Transitivity of American News on Edible Insects by Proportion.

This figure reveals that the ecological properties of clauses in American media news on edible insects is obviously unsustainable. The ambivalent processes account for the highest proportion at 68.99%, followed by the destructive process at 23.02%. In contrast, the beneficial process is the

least at 7.99%. In this regard, the reasons for the imbalance of ecological properties hidden in transitivity structure can be explained.

5. Discussion

The main objectives of this study are first to examine the transitivity structure of clauses in American edible insect news, and then to explore the relationship between insects and humans in light of the ecological characteristics of the transitivity structure. The findings show that the dissemination of information on edible insect food, as well as the teaching of readers about the effects of edible insects on human society, are accomplished through the semantic configuration of material and relational processes. However, the wider picture reveals that the ecological beliefs propagated by the processes in clauses are mostly unsustainable and have a higher proportion of ecologically ambivalent and destructive properties.

5.1. Material and Relational Processes in American Edible Insect News

For one thing, American news reports on edible insect utilize material processes to dynamically describe the behavior of eating insects, thus mirroring the social changes that edible insects have wrought.

Example 1: You'll probably have better luck looking for nymphs and teneral at night. Pop them into a container and freeze it to kill them humanely. When you're ready to cook, remove from the freezer and rinse very well to remove any dirt. Parboil or blanch them for about two minutes to "firm them up," and then they're ready to cook as you like. (Article 19)

The process of cooking an insect in Example (1) is vividly illustrated by multiple material processes. Specifically speaking, the operative transitive material clauses use "pop", "freeze", "kill" and other dynamic verbs to present humans' vitality, but they in turn reflect the static or inanimate nature of insects. The "nymphs" and "teneral", as the patient, lose their existence as living beings. By contrast, "You" meaning humans, as the actor, become the masters of life. Such discordant expression cannot provide the readers with the knowledge related to insects, let alone the use of comprehensible and sustainable discourse to make readers quickly understand or realize that the development of edible insects at the present stage is not to encourage humans to conquer the world.

Besides, American news reports on edible insect tend to apply relational processes to establish the relationship between humans and insects or between insects and the environment.

Example 2: Insects are a highly nutritious and healthy food source with high fat, protein, vitamin, fiber and mineral content. (Article 4)

Example 3: Eating insects is not only good for their health, it is good for the planet. (Article 12)

In Example (2), the authors relate the nutrient content of insects to humans. However, the biased evaluation of their nutritional value hidden in the clauses reflects a semantic evaluation configuration of the relational process. Briefly speaking, in the process of semantic interaction between the actor and the recipient, the actor will give human's own value judgment, emotional attitude, or comment on the specific things [22]. In this way, the relational process guides the public to consider the health benefits of eating insects from a profit standpoint.

Likewise, Example (3) derived the value of insects to the level of ecological environment, highlighting the ecological

benefits of eating insects. However, the relational process transfers the ecological nature of insects to the benefits of insect-eating, which not only covers up other features of natural beings, but ignores other attributes of natural elements over time [23].

To summarize, American news on edible insects frequently employ material process and relational process to enlighten viewers about eating insects while attempting to persuade them to absorb more environmentally beneficial protein. During the process, however, unseen anthropocentrism is brewing. In the following part, the ecological implications reflected will be further examined.

5.2. Ecological Properties of Transitivity

The majority of discourses in people's lives, according to Alexander and Stibbe, are neutral and coexist with ecological and non-ecological elements[24]. The ambivalent processes in American edible insect news emphasize the ecological importance of insects and the positive effects of eating insect food on the environment, while simultaneously erasing human environmental degradation. There is one example.

Example 4: "It's all about taste," he said. "In food, you can say whatever you want about marketing. 'Hey, it's good for the environment. It's good for you.' Really, what it comes down to is taste." (Article 8)

Example (4) illustrates the contradiction in the promotion process for edible insects. Before the verb "said", the orator explained through the relational verb "is" that the key to promoting insect food is taste. Although the content after the verbal process of "said" stresses that marketers would highlight the ecological significance of insects and the positive impact of insects on human society, what people pay attention to is not these intangible benefits, but tangible values—taste.

This shows that media perceptions of insects and the impact of edible insects are contradictory. It is because of the wavering ideology hidden in the discourse that people really see insects as a kind of food rather than an environmentally beneficial creature. The speaker and marketer is less likely to pay attention to the ecological value of insects, which makes the ambiguous ecological orientation of such discourse.

Compared with ambivalent processes, destructive processes clearly exhibit anthropocentrism, or a people-first worldview. In the American edible insect news, destructive processes directly mold insects as commodities and just highlight the economic and dietary benefits of insects.

Example 5: U.N. promotes insects as low-fat, high-protein snack to feed the hungry. (Article 1)

Example 6: Edible insects are being promoted (by U.N.) as a low-fat, high-protein food for people, pets and livestock. (Article 1)

In Example (5), the writer show that U.N. sees insects as food for the hungry through two material processes, which implicitly conveys inharmonious concepts to the reader. For one thing, the writer uses the United Nations as the actor and removes himself, not only to improve the persuasive power, but also to promote people to see insects as inanimate snacks. This goes against the principle of conscience, which is to respect, care for and protect the natural objects in the ecosystem, and to care for the wholeness of human as well as non-human species [18]. For another, the meaning of the process "feed" alienates the difference mentioned in the principle of proximity to "inequality", reflecting a sense of condescension. It distinguishes the inferiority and the

superiority of human beings, and separates human beings from natural objects.

By contrast, Example (6) is a receptive transitive material clause, with process realized by the passive verbal group. Specifically speaking, the actor in Example (6) was erased, which covers not only the author himself, but also the U.N. who initiated the movement, and solidifies the role of insects as food for human and non-human animals. This avoids responsibility not only for the reporter, but also for the entire human community.

The two sentences showcase a classic form of anthropocentrism. From the perspective of ecological process, the author implicitly expresses the attitude or cognition that insects are food, which conveys an unsustainable concept to the readers. Such an unsustainable view sees insects as simply objects that provide convenience and aid to people. In addition, when insect food is only used to improve the environment destroyed by human beings, once its evil factors are in the dominant position, it will spare no effort to attack the nature and become a sword that ravages the nature and destroys the harmonious ecology.

According to the analysis above, readers receive the unsustainable message that renders insects lifeless, which is not favorable to peaceful coexistence between people and insects. But there is a small amount of useful process in the news as well. They magnify insects' natural state in the environment, so as to weaken people's aversion and disgust towards insects by highlighting the ecological value of insects. However, there is also a little amount of beneficial processes in the news. By emphasizing the ecological significance of insects and their natural state in the environment, beneficial processes help to lessen people's dislike and revulsion for insects.

Example 7: Over the past few weeks, nymphs have created tunnels from which they'll emerge when the soil is warm enough. These nymphs will pop out of the ground, climb upward, then molt their nymphal case, just like a crab casting off an old exoskeleton. At this stage, when they are called teneral, they will appear creamy white, with a few blushes of yellow. (Article 19)

The purpose of analyzing beneficial discourses is to promote them as useful alternative ways of telling stories about the world and make them widespread [7](pp.30). Example (7) is a typical case in point. The sentences use a series of material processes to visualize the growing process of insects, boldly presenting insects' living conditions. From the perspective of emotion, it is the author's care and benevolence towards insects that makes the article full of humanistic feelings. It is a way to resonate highly with the readers. In addition, the verbs such as "create", "emerge" and "climb" used in the clauses make the agent have the initiation and autonomy. Although no psychological process or speech process is utilized for anthropomorphizing, the dynamics of insects have been revealed.

From a deeper perspective, the reporter tried to give insects some behavioral abilities to show the desire for closeness, which is in line with the principle of proximity, and it is also a positive ecological behavior. Based on the view of ecological philosophy, the clause is an objective description of the behavior ability of insects by human beings, but it strongly reflects the positive ecological effect of being close to nature, which is consistent with ecosophy in this paper, and belongs to the ecological protection process. In this way, the ecological attribute of the clause is clear, and its ecological

significance can also be presented intuitively.

In summary, despite there are scattered beneficial processes, the American news on edible insects generally put insects in an inferior position and fail to build the relationship between humans and insects on an equal footing.

6. Conclusion

This study explored the transitivity structure of American news on edible insects, discussed the frequently used material and relational processes, and unveiled ecological connotations of the transitivity structure.

To promote the popularization of edible insects, the semantic configuration of material processes and relational processes in American news on edible insects is used to spread information about insect food, so as to realize the information function and social function about "edible insects is helpful to health and environment". This teaches readers about the effects of edible insects on human society. The ecological ideologies propagated by the American news on edible insects, however, are unbalanced from a deeper perspective; they are awash with ambivalent processes and destructive processes. The authors' propensity to view insects as a class of natural resources with economic and nutritional worth, as well as their view of using edible insects as a way to address food shortages, obscures the importance of insects as living creatures in the natural world.

This study suggests that rather than continually highlighting their economic benefits, reporters should explain the ecological significance of insects. Additionally, journalists should help readers understand that while eating insects can be used as a way to improve the environment, human conservation of nature should not always be carried out in a way to compensate for the loss of insect niche. We can never hide the fact that humans have harmed the environment and ecology.

Acknowledgment

2022 Chongqing Innovation Project for Postgraduate Research (No.: CYS22082)

References

- [1] Lockwood, J. A. *The Infested Mind: Why Humans Fear, Loathe, and Love Insects*; Oxford University Press: Oxford, America, 2013.
- [2] Yen, A. L. Edible insects: Traditional knowledge or western phobia?. *Entomological Research*, 2009, 39(5), 289-298. doi: 10.1111/j.1748-5967.2009.00239.x
- [3] Feng, Z.; Zhongning, Z. Study on edible insect resources and their exploitation and utilization. *Resources Science*, 2001, 2, 58-61+97.
- [4] Food and Agriculture Organization of the United Nations. *Edible Insects: Future Prospects for Food and Feed Security*, Wageningen: Rome, 2013
- [5] Tartory, R. Critical discourse analysis of online publications ideology: A case of middle eastern online publications. *SAGE Open*, 2020, 10(3), 1999497149. <http://doi.org/10.1177/2158244020941471>
- [6] Hassan, A. Language, media, and ideology: Critical discourse analysis of Pakistani news bulletin headlines and its impact on viewers. *SAGE Open*, 2018, 8(3), 1999712035. <http://doi.org/10.1177/2158244018792612>

- [7] Stibbe, A. *Ecolinguistics: Language, Ecology and the Stories We Live By*, Routledge: London, 2015.
- [8] Jinba, W. An analysis of ideological perspectives in media discourse. *Journal of Xi'an International Studies University*, 2015, 3, 54-59.
- [9] Yin, Y. The ecological approach of media reports: An ecological discourse analysis of the BBC news headlines about China haze. *Journal of University of Science and Technology Beijing (Social Sciences Edition)*, 2018, 4, 33-41.
- [10] Yang, Y. Ecological discourse analysis of news reports from the perspective of systemic functional linguistics. *Journal of Beijing International Studies University*, 2018, 1, 33-45.
- [11] Halliday, M.A.K., & Matthiessen, C. M. I. M. *An Introduction to Functional Grammar*, 4th ed; Routledge: London, 2014.
- [12] Wei, H.; Rong, W. An analytical framework of transitivity for international ecological discourse. *Modern Foreign Languages*, 2017, 5, 597-607.
- [13] Wei, H.; Ruijie, Z. An Ecological Analytical Framework for Discourse. *Foreign Languages in China*. 2017, 5, 56-64.
- [14] Naess, A. *Ecology, Community and Lifestyle: Outline of An Ecosophy*. Cambridge university press: Cambridge, 1990.
- [15] Wei, H.; Jiahuan, L. A Study of the Representation of One Belt One Road Initiative in News Reports of the Mainstream Chinese Media in Singapore. *Journal of Beijing International Studies University*, 2019, 41(02), 67-80.
- [16] Qingju, Q. The thought and practice of Confucian ecological culture. *Confucius Studies*, 2008, 6, 13-18.
- [17] Guowen, H.; Ruihua, Z. On the origin, aims, principles and methodology of eco-discourse analysis. *Modern Foreign Languages*, 2017, 5, 585-596.
- [18] Guowen, H.; Ruihua, Z. *What Is Ecolinguistics*; Shanghai Foreign Language Education Press, Shanghai, China, 2019.
- [19] Huang, G.; Ruihua, Z. Harmonious discourse analysis: approaching peoples' problems in a Chinese context. *Language Sciences*, 2021, 85, 101365. doi: 10.1016/j.langsci.2021.101365
- [20] Chengdu, W. Transitive and synergistic: Reflections on the ecologicality of ecological language. *Nanjing Journal of Social Sciences*. 2019, 8, 121-125.
- [21] Ting, J.; Yinhua, Y. (2019). Ecological Analysis of Popular Science Articles on Artificial Intelligence. *Journal of University of Science and Technology Beijing (Social Sciences Edition)*, 2019, 6, 1-9.
- [22] Rong, W. A corpus-based study of constructing the evaluative semantic system for the beneficial discourse. *Journal of Xi'an International Studies University*, 2019, 2, 43-48.
- [23] Ting, J.; Hui, Z. Attitude resources in Chinese and American advertising discourse from the perspective of ecological niche. *Modern Foreign Languages*, 2021, 1, 37-48.
- [24] Alexander, R., & Stibbe, A. From the analysis of ecological discourse to the ecological analysis of discourse. *Language Sciences*, 2014, 41, 104-110. doi: 10.1016/j.langsci.2013.08.011.