

# Systematic Literature Review of Ecological Discourse Analysis From 2014 to 2023

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**Abstract**—One of the crucial foci of contemporary linguistics is upon the complex human-nature relationship within the Anthropocene. An essential methodology of eco-linguistics is Ecological Discourse Analysis (EDA), a field which combines linguistics and ecology. The philosophical underpinning of EDA is rooted in an ecological thematic framework, emphasising the significance of biodiversity and sustainability in the natural world. Despite gaining attention over the past decade, EDA still lacks a comprehensive explanation to adequately and accurately explain the fundamental assertion of its philosophical framework: it gives undue prominence to language biodiversity and sustainability. This systematic literature review, conducted using the PRISMA 2020 paradigm, covers studies from 2014 to 2023. It examines 38 works on EDA across several genres. Further clues illustrate the application of EDA to various genres, often informed by theoretical frameworks associated with systemic functional linguistics, cognitive linguistics, and corpus linguistics. EDA research concentrates on ecological discourse and advocating for protection, exposing the lack of nomenclature, analytical framework, application domain, theoretical framework, and objectives. Furthermore, EDA faces challenges in effectively addressing ecological issues within discourse construction because it does not have a sound theoretical paradigm or enough systematicity. Furthermore, the texts analysed using EDA predominantly focus on ecological discourse, with only a few studies incorporating non-ecological literary texts. This underscores the necessity of expanding the scope of ecological linguistic research.

**Index Terms**—applied linguistics, Ecological Discourse Analysis, EDA, sociolinguistics, systematic literature review

## I. INTRODUCTION

Critical Discourse Analysis (hereafter CDA) is an analytical approach that aims to interpretively link linguistic details to strategic political functions (Chilton & Schäffner, 1997; Stibbe, 2001). Van Dijk (1993) announced that CDA is an analytical discourse approach that primarily studies how social power abuse and inequality are enacted, reproduced, legitimated, and resisted by text and talk in a social and political context.

With ecology becoming a pan-disciplinary topic, the CDA approach has recently been suggested for discourse analysis related to the ecosystem and natural world (Frayne, 2015). Goatly (2002) adopted CDA to investigate the representation of nature on BBC World Service radio. Zunino (2009) employs CDA to discuss the multiplicity of meanings of ‘biodiversity’. Alexander (2008) combines CDA with corpus linguistic techniques, empirically showing how specific linguistic features uphold discourse processes.

As research advances, it becomes evident that the theoretical frameworks and methodologies inherent in CDA are no longer sufficient to meet the analytical demands of ecological discourse. O’Halloran (2011) stated that CDA is concerned with expressing, implementing, and constructing social ideology through discourse. It also explores social injustice and irrationality, which does not go beyond “anthropocentrism”. Stibbe (2014) pointed out that eco-linguistics tended to use traditional CDA as a normative framework, while eco-linguistics considers not just the relationships of humans with other humans but also with larger ecological systems that all life depends on. Xin and Huang (2013) stated that analysing natural and ecological discourses with the CDA approach is inappropriate, and eco-linguistic discourse analysis is not a sub-area of CDA.

Based on the previous research, Alexander and Stibbe (2014) put forward the term “ecological discourse analysis (hereafter EDA)” or “the ecological analysis of discourse”—stating that EDA is a central approach in the discipline of eco-linguistics. According to Stibbe (2015), EDA examines the influence of language on the life-sustaining relationships of humans with each other, other organisms, and the natural environment. Stibbe (2015) proposed potential ecosophy sources of EDA, including Sustainable Development, Social Ecology, Ecofeminism, and Deep

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Green Resistance. The analytical methodology of EDA comprises four distinct steps—namely, the collection of prototype texts, the analysis of language patterns, the exposure of latent ideologies, and the ultimate ecological judgment (Stibbe, 2015; Zhou, 2016). As the central approach in eco-linguistics, EDA has an inseparable investigation of the close correlation between language symbols and nature (Steffensen & Fill, 2014; Zhou, 2022). Eco-linguistics studies language's impact on life-sustaining relationships among humans, other organisms, and the physical environment (Alexander & Stibbe, 2014).

Stibbe (2014) underscored a noteworthy correlation between EDA and CDA, with similarities observed in their characteristics—excluding the ecological dimension. On the other hand, Stibbe (2015) contends that the breadth and depth of research in EDA are unparalleled by CDA because it encompasses the entire ecological system of nature.

Due to the indirect nature of language in influencing social reality, there has been intense debate regarding the extent and efficacy of linguistic contributions to ecological conservation. Halliday (1990; 2001) held a pessimistic view towards using grammar in language to protect the environment. Conversely, Stibbe (2015) stated that eco-linguistics primarily directs its attention to the level of discourse, as it is at this level that change is feasible—unlike the more overarching and relatively unalterable grammar of a language in the short term. Likewise, Nash (2016) critically asserted that eco-linguistics can contribute value to linguistics and environmental studies. Simultaneously, Paşcalău et al. (2021) asserted that language inherently reveals the core of human-nature relationships—suggesting that ecology preservation can be accomplished through linguistic means.

As put by Alexander and Stibbe (2014), the approach seeks to investigate the implicit ecological meaning of speech through the analysis of the characteristics of the language, examine people's ecological consciousness as evident in speech, and describe verbal and predictive speech from the speech of incompatible ecosystems. The primary and foremost question the EDA seeks to answer is “What is it about the abstraction of language and the realities that it creates that is implicated in ecological destruction?” (Stibbe, 2012, p. 4). Over the past ten years, EDA has become an emerging approach used in different fields and works. However, although it is increasingly being used, no systematic literature review exists to show domain, objective, theory, and how other approaches converged with EDA. This emphasises the need for a comprehensive and systemic literature review from 2014 to 2023. Hence, the research questions this study intends to answer are as follows:

1. How did past studies use EDA as an analytical method?
2. What are the existing gaps in EDA research that necessitate further investigation?

In order to cover the two questions mentioned above, we implemented a Systematic Literature Review on EDA studies. This SLR was undertaken to explore and identify the trend of research, the gap from the prospected research, application domains, research objectives, theoretical developments, and analysis approaches in EDA. SLR is a secondary study method with minimal bias and a maximum degree of reliability (Page et al., 2021; Haddaway, 2022). It is conducted with a more rigorous, scientifically defined, and systematic approach under the guidance of PRISMA to collect literature and answer research questions. Therefore, this SLR is essential for a clear literature review of EDA studies.

## II. METHODS

### A. Data Collection and Processing

Since its inception in 2014, EDA has undergone a decade of continuous development (Alexander & Stibbe, 2014). This study conducted a Systematic Literature Review to summarise the application of EDA and identify gaps in its research over the past ten years (from 2014 to 2023). Preset inclusion and exclusion criteria were employed while screening titles, keywords, and abstracts (Liu et al., 2022). Full-text reading was also utilised in the evaluation to address any potential omissions.

The literature search was conducted in ProQuest Central, Scopus and China National Knowledge Infrastructure (CNKI) databases due to the diverse coverage of databases. ProQuest is the largest multidisciplinary full-text database, and its ability to search was used to recover as many of the published research papers on EDA as possible at this stage. The process of recovering the papers with the inclusion of Scopus, which is acknowledged as the most extensive database of peer-reviewed literature for social science (Steinhardt et al., 2017). It can provide a thorough perspective as well as a variety of options for refining global research output (Zhong et al., 2023). In addition, Chinese was used to broaden the depth of research. CNKI was also included in the review, for it is acknowledged as the “world's largest academic Chinese full-text database covering various disciplines” (Li, 2020, p. 41; Lin et al., 2021, p. 2655).

This study conducted preliminary searches in December 2023 using Boolean logic, employing the following search terms: (EDA) OR (eco-discourse AND analysis) OR (ecological AND discourse AND analysis) OR (eco-linguistic AND discourse AND analysis) OR (eco-critical AND discourse AND analysis). The literature retrieved from ProQuest Central, Scopus, and CNKI using the specified Boolean logic was directly exported and linked to Zotero and Microsoft Excel for further analysis.

### B. Inclusion and Exclusion Eligibility Criteria

Since its inception in 2014, EDA has undergone a decade of continuous development (Alexander & Stibbe, 2014). This study conducted a Systematic Literature Review to summarise the application of EDA and identify gaps in its

research over the past ten years (from 2014 to 2023). Preset inclusion and exclusion criteria were employed while screening titles, keywords, and abstracts (Liu et al., 2022). Full-text reading was also utilised in the evaluation to address any potential omissions.

To ensure both the quality and accuracy of the selected articles, this study established the following inclusion and exclusion criteria (cf. Table 1) and reviewed each paper to determine its suitability for the analysis presented in this paper.

TABLE 1  
INCLUSION AND EXCLUSION CRITERIA

| Inclusion Criteria |   | Exclusion Criteria |   |
|--------------------|---|--------------------|---|
| a.                 | Include EDA in their titles, abstracts, or keywords             | 1)                 | Without EDA in their titles, abstracts, or keywords                         |
| b.                 | Publication dates should fall within the range of 2014 to 2023. | 2)                 | Publication dates outside the range of 2014 to 2023.                        |
| c.                 | Publications that utilise EDA in the field of eco-linguistics.  | 3)                 | Publications that utilise EDA but fall outside the field of eco-linguistics |
| d.                 | Research papers   | 4)                 | Literature reviews, commentaries, or meta-analyses                          |

The inclusion criteria are developed based on the following reasons. Firstly, the articles included must mention EDA in the title, summary, or keywords because EDA is the central focus of this paper. Secondly, the works should be written between 2014 and 2023, as the EDA was introduced in 2014, and this article was written in December 2023. Thirdly, the articles in ecological philosophy, ecological ethics, and ecological literature will be excluded due to their distinct developmental stages compared to eco-linguistics. Fourthly, this paper is a comparative study of theoretical frameworks, research objectives, and research domains. Therefore, only research articles will be included; reviews, commentaries, and meta-analyses will be excluded.

### C. Screening Result

The process of PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) review is illustrated in Figure 1 and represents the stages of identification, screening, eligibility assessment, and analysis. Specifically, during the identification step, a total of 358 articles were first retrieved and extracted using keyword queries. Then, 56 articles identified by titles and DOI numbers were automatically excluded as duplicates in Microsoft Excel. Further, the screening of the titles/abstracts led to the exclusion of 163 articles. Out of the 139 articles that were supposed to be retrieved, seven papers could not be retrieved. In parallel, a full-text review of 132 articles was conducted. The eligibility assessment excluded 79 irrelevant articles and 15 non-research papers. The final list of included papers consisted of 38 papers.

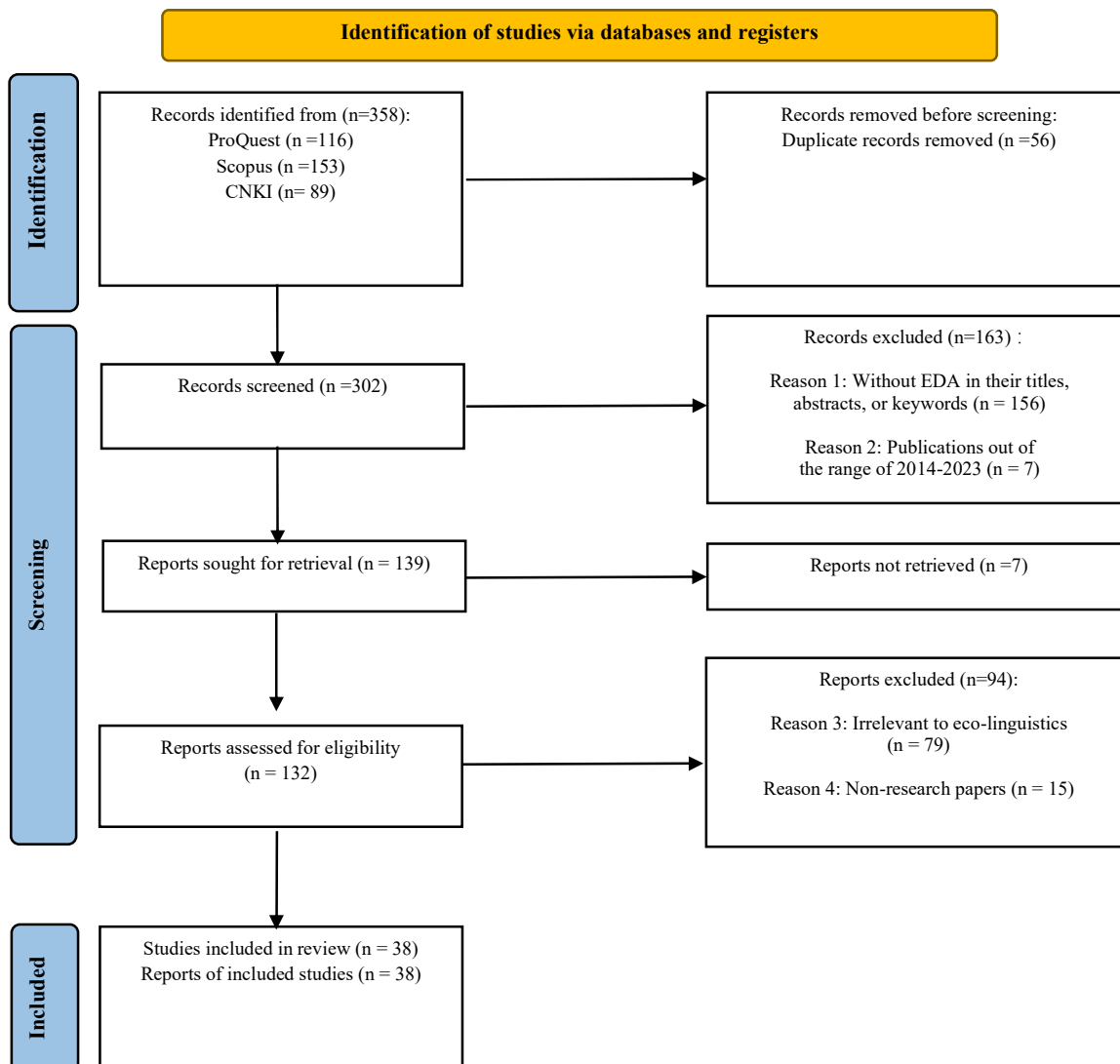


Figure 1. PRISMA 2020 Flow Diagram for EDA SLR (Page et al., 2021; Haddaway, 2022)

### III. RESULTS AND INTERPRETATIONS

After analysing all 38 included articles, research domains, research objectives, and theoretical foundations supporting the analysis approach were meticulously documented and analysed. The specific details are as follows.

#### A. Research Domains

Alexander and Stibbe (2014) indicated that EDA should not be confined to the analysis of “ecological discourse” but can instead be applied to various discourses that may impact the ecosystem.

Based on the research of the past decade, we can observe that EDA involves various domains, primarily including political discourse (Talebi-Dastenaeei, 2015; Zuo, 2019; Wang et al., 2019a; Wang et al., 2019b; Cheng & He, 2022; Drury et al., 2022; Franklin et al., 2022; Wei, 2022; Ma & He, 2023), news (Ebim, 2016; Yang & Yang, 2018; Ali, 2019; Fouad, 2019; Xue & Xu, 2021; Acha, 2022; Zhang et al., 2023), poetry (Abdullah, 2022; Pan, 2022; Wang, 2022; Janjua, 2022), novels (Liu, 2019; Wang, 2021; Sheng, 2021; Abdullah, 2022; Fashal, 2022; Luo, 2022; Awny, 2023; Gu & Guo, 2023; Zhang, 2023), and advertisements (Wang, 2018; Fernández & Sancho, 2020; Stibbe, 2023).

Additionally, the research domains extend to include positive ecological discourse (Guo, 2019), Quranic Discourse (Hameed, 2021), Lexicon (Prastio, 2021), Greta Thunberg's Speech (Naz, 2022), and Green Discourse (Masitoh, 2022; El-Zouka, 2023). For further details, refer to Figure 2 below.

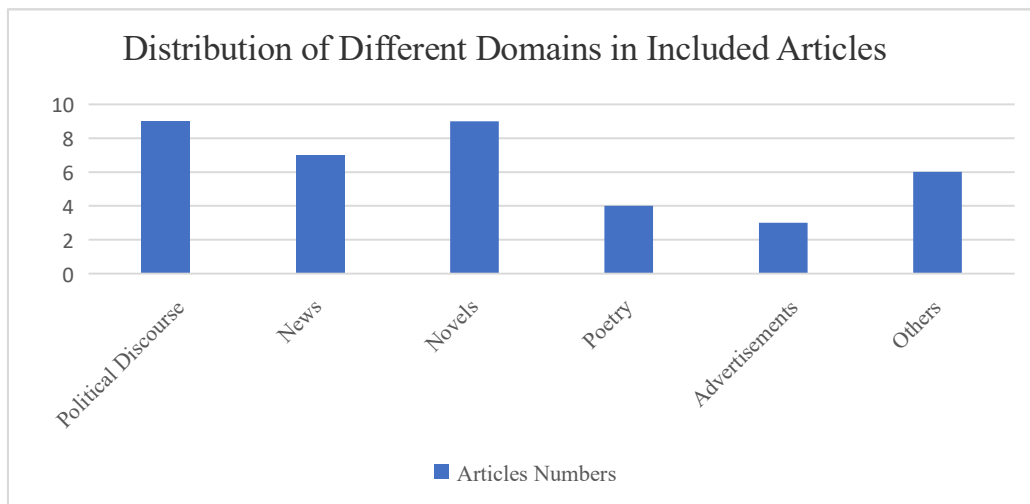


Figure 2. Distribution of Different Domains in Included Articles

Among them, political discourse and news related to ecology are the primary domains that are analysed. This analytical emphasis has been present since the inception of EDA and has persisted up to the present day. This suggests that the focus of EDA remains on “ecological discourse”. The analysis of poetry emerged as a new trend in 2022. The utilisation of EDA for novel analysis commenced in 2019 and has since evolved into a prominent domain for EDA analysis spanning from 2021 to 2023. Notably, the exploration of EDA in analysing advertising texts commenced in 2018 but has not received substantial attention. Stibbe's (2023) ecological discourse analysis of Coca-Cola advertisements provides a unique viewpoint on the role of language use in contributing to ecological conservation.

In summary, EDA's research domains encompass a diverse range, including political discourse, news, novels, poetry, advertisements, ecological discourse, and green discourse. This finding suggests that EDA has found applicability in diverse textual domains. While not every domain has received similar levels of attention, it underscores the broader scope of EDA's applicability.

### B. Theoretical Foundations

Due to the interdisciplinary nature of eco-linguistics, scholars employing EDA for identification, classification, and analysis typically draw from various theoretical foundations. The distribution of different theoretical foundations used in EDA is illustrated in Figure 3.

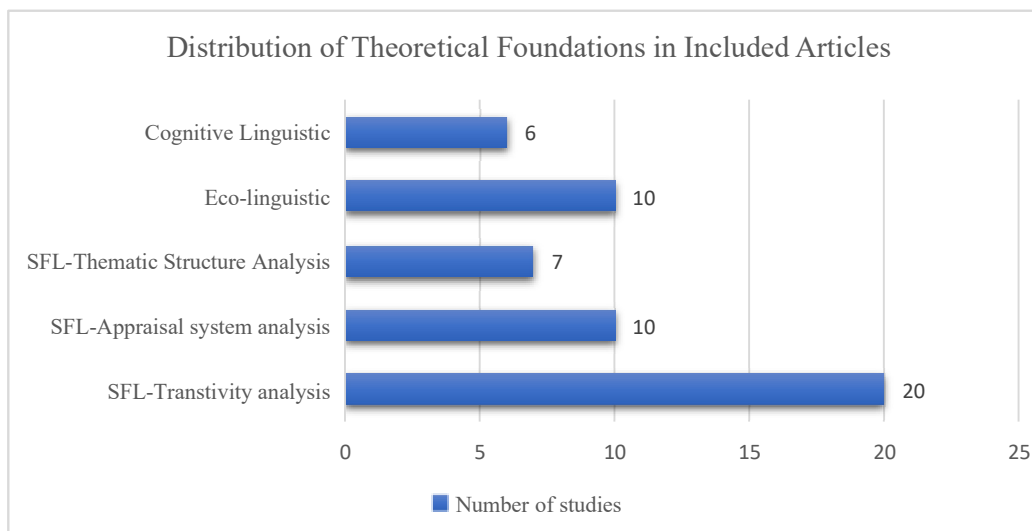


Figure 3. Distribution of Theoretical Foundations in Included Articles

It is worth mentioning that, while EDA was formed in the framework of eco-linguistics, not all included publications followed the eco-linguistic concept. As an emerging interdisciplinary field intersecting linguistics and ecology, there remains room for further enhancement and refinement of the theoretical frameworks and methodologies.

Among the included studies, Systemic Functional Linguistics (hereafter SFL) theory had the highest frequency. SFL provides a theoretical foundation for EDA, offering practical approaches for problem identification, analysis, and resolution, as well as tools for handling specific language details (Zhao, 2016). Transitivity analysis is the domain mostly applied, accounting for 20 articles out of 38 (Wang, 2018; Ali, 2019; Fouad, 2019; Guo, 2019; Liu, 2019; Wang et al., 2019a; Zuo, 2019; Wang et al., 2019b; Wang, 2021; Sheng, 2021; Abdullah, 2022; Acha, 2022; Pan & Yuan, 2022; Naz et al., 2022; Janjua, 2022; Wang & Fang, 2022; Wei, 2022; Awany, 2023; Gu & Guo, 2023). The applications of appraisal system analysis and thematic structure analysis are less—accounting for 10 and 7 articles, respectively.

Although SFL was regarded as the most widely utilised theoretical foundation in the included articles, some studies considered other theories or concepts. Detailed information on the distribution of other theories is shown in Figure 3. Over a decade of exploration and development, Stibbe proposed eight patterns for ecological storytelling, including ideology, evaluation, erasure, salience, identity, narrative, framing, and metaphor (Ma & Stibbe, 2022). Additionally, theories revolving around Cognitive Linguistics have been applied in the practice of EDA. Both schema and frame theories were employed to analyse the cognitive functions in EDA (Hameed, 2021; Prastio et al., 2021; Abdullah, 2022; Drury et al., 2022; Franklin et al., 2022; Fashal, 2022). Corpus Linguistic theory has been introduced as a novel approach in EDA research.

In sum, the linguistic theoretical foundation of EDA is centred primarily around the classic linguistic theories of systemic functional linguistics and cognitive linguistics, as well as the growing eco-linguistic theory. While not all research outcomes converge on a singular theoretical framework, this diversity aligns with the developmental trends of emerging analytical approaches. The eco-linguistic theory has been a prevalent lens in the studies under consideration. Simultaneously, ongoing research papers are actively contributing to the continual refinement and deepening of the theoretical underpinnings of eco-linguistics. It is important to note that theoretical foundations are not established overnight but evolve and solidify through practical validation processes.

### C. Research Objective

Due to the intersection of eco-linguistics and EDA, the foundational question posed was, “What is it about the abstraction of language and the realities it creates that is implicated in ecological destruction?” (Stibbe, 2012, p. 4). Addressing this question has been an ongoing process—with scholars offering diverse perspectives. In the literature, these perspectives manifest as research objectives.

Over the past decade, research objectives have primarily fallen into several categories: 1. Discursive Level: To distinguish the attributes of ecological discourse. 2. Awareness Level: To reveal the ecological awareness of a specific subject (country/enterprise) and to compare the ecological awareness of different countries. 3. Advocacy Level: To call for attention to ecology and to guide and advocate for ecological protection actions. 4. Behavioural Level: To build channels for language use to solve ecological problems.

The included studies exhibit diverse research objectives with varying frequencies (cf. Table 2).

TABLE 2  
PUBLICATIONS WITH DIFFERENT RESEARCH OBJECTIVES

| Research Objective Categories | Research Objective  | Number of studies | Percentage of studies |
|-------------------------------|---|-------------------|-----------------------|
| Discursive Level              | To distinguish the attributes of ecological discourse                         | 18                | 47%                   |
| Awareness Level               | To reveal the ecological awareness of a specific subject (country/enterprise) | 14                | 36%                   |
|                               | To compare the ecological awareness of different countries                    | 7                 | 18%                   |
| Advocacy Level                | To call for attention to ecology  | 8                 | 21%                   |
|                               | To guide and advocate for ecological protection actions                       | 8                 | 21%                   |
| Behavioural Level             | To build channels for language use to solve ecological problems               | 11                | 29%                   |

The construction of anthropocentric discourse is often an unconscious act. EDA can reflect the relationship between language and other ecological phenomena; furthermore, it has the potential to awaken, guide, and alter human understanding of the environment and nature (Yang & Yang, 2018).

At the discursive level, there is one objective—namely, “To distinguish the attributes of ecological discourse”. This objective appears to be the most emphasised, with 47% of studies published in the past decade aiming to solve this objective—reflecting a predominant focus on EDA analysis at the discursive level.

At the awareness level, some noteworthy observations were made by analysing the percentages. Firstly, “To reveal the ecological awareness of a certain subject (country/enterprise)” is the most frequently mentioned research objective ( $p=36%$ ), which is determined by the philosophical foundation of EDA. Secondly, “To compare the ecological

awareness of different countries” is less mentioned ( $p=18\%$ )—reflecting the scholarly attempts and demands for comparative studies in this domain.

At the advocacy level, “To call for attention to ecology” and “To guide and call for ecological protection actions” represent the advocacy of ecological protection, which aligns with the principles of EDA. However, both objectives remain at the level of appeal and advocacy. In the included literature, these two objectives often appear as the second research objective of certain studies.

At the behavioural level, it is noteworthy that “To build channels for language use to solve ecological problems” is considered. Analysing the years, this research objective primarily appeared in studies from 2021 onwards. As the primary research objective proposed by Stibbe (2015), it is beneficial to have such a level of recognition. This means that the exploration of language use as the meta-goal of solving ecological problems by unpacking them is achieved.

In summary, the studies included in this SLR consistently target four specific levels: discursive level, awareness level, advocacy level, and behavioural level. The foundational discursive level is emphasised because EDA operates as an approach to scrutinising discourse. The levels of awareness, advocacy, and behaviour represent distinct attempts to impact societal realities through changes in language use. Based on the findings, it is possible to conclude that there is little research that investigates the behavioural level. However, the observed tendencies show that over the decade, increased attention has been paid to the aspect. It also could be concluded that as a product of social development, further exploration and validation could be an issue for research.

#### IV. GAPS AND FUTURE AGENDA

Despite the considerable progress achieved by EDA over the last decade, there are gaps in the existing nomenclature and analytical frameworks as well as the application fields. That is why the present SLR has to explore these research gaps from the perspective of a nomenclature gap, an analytical framework gap, and an application field gap. In addition, exploring the research domains, the theoretical foundation, and the research objectives is beneficial so that future research can address these gaps and fill the current voids.

##### A. Gaps in Nomenclature

The findings of the SLR indicate that the use of EDA as an analytical method is becoming more common. However, EDA still lacks a standardised nomenclature. According to Alexander and Stibbe (2014), who first proposed EDA, it was initially called Ecological Discourse Analysis. However, Stibbe’s (2015) later proposal advocated for an alternative designation for EDA - namely Eco-linguistic Discourse Analysis. The research examined how the opposing naming approaches reflected diverging perspectives on EDA in relation to analytical methodology and eco-linguistics. While disparities persist between the two names, their spheres of application and burgeoning lines of inquiry appear virtually indistinguishable. Meanwhile, Acha (2022) adopted a reasonably comparable analytical methodology yet termed the scrutiny as Ecocritical Discourse Analysis, or EcoCDA for short.

This study asserts that the limited widespread adoption of the nomenclature for ‘Eco-linguistic Discourse Analysis’ and ‘Ecocritical Discourse Analysis (EcoCDA)’ can be attributed to inherent issues. On the one hand, Eco-linguistic Discourse Analysis emphasises its application within eco-linguistics—the utility of EDA extends beyond this domain to encompass the analysis of texts in various other fields. On the other hand, the nomenclature Ecocritical Discourse Analysis (EcoCDA) subsumes EDA as a subset of Critical Discourse Analysis (CDA)—potentially hindering the independent development of EDA.

Therefore, to further advance and promote EDA as an analytical approach, future research endeavours should prioritise establishing a standardised nomenclature for EDA. Upon comparison of the three naming strategies, this study concludes that “Ecological Discourse Analysis” seems to be the most apt choice. A standardised nomenclature contributes to positioning EDA as an analytical approach that garners systematic attention in future research—preventing the dispersion of focus resulting from inconsistent naming practices. Simultaneously, the studies included in this SLR have exhibited a trend over the past decade, primarily adopting the nomenclature ‘ecological discourse analysis’—further highlighting the importance of nomenclature conventions in shaping research focus. However, this proposition requires further validation through subsequent developments in the field.

##### B. Gaps in Analytical Frameworks

In the included studies, EDA is employed as an analytical approach. However, not all studies exclusively adopt EDA as the sole analytical method, as is shown in Figure 4. Simultaneously, supplementary approaches—such as Critical Discourse Analysis (CDA) ( $p=36.84\%$ ), Political Discourse Analysis ( $p=2.63\%$ ), and Multimodal Discourse Analysis ( $p=10.53\%$ )—are also utilised. According to Huang (2022), the primary distinction between EDA and CDA lies in their respective philosophical foundations. EDA’s primary philosophical underpinning is “de-anthropocentrism”, with a focus on analysing issues related to the interaction between humans and ecology. In contrast, CDA’s primary philosophical foundation is “anthropocentrism”—exploring issues associated with discourse power distribution. He (2021) points out that EDA, along with PDA and MDA, entails a relationship of mutual inclusion—embodying both a whole and a part. Consequently, the concurrent and complementary use of these analytical approaches has become a trend in research.

However, as an independent analytical approach, EDA should not only rely on philosophical foundations but also develop a more independent theoretical basis and analytical framework.

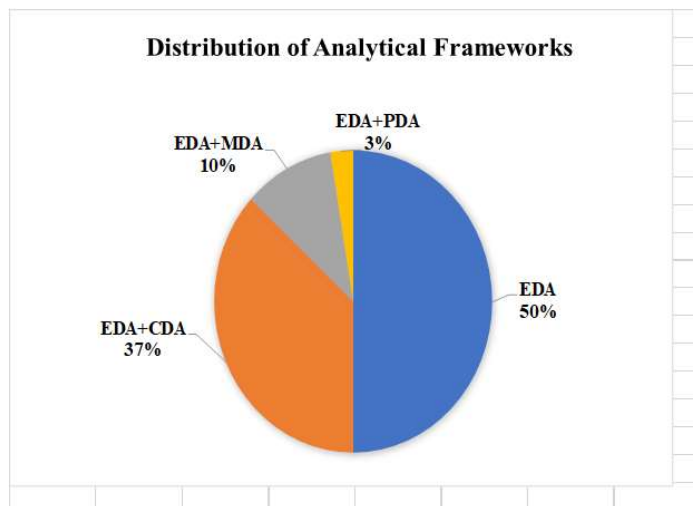


Figure 4. Distribution of Analytical Frameworks in Included Articles

In sum, researchers adopted EDA as an analytical approach in 2014. However, based on the research articles included in this SLR, EDA is seldom employed as the sole analytical approach. Instead, it is commonly utilised in conjunction with other approaches—such as 'EDA + CDA,' 'EDA + MDA,' or 'EDA + PDA.' This study acknowledges that such combinations align with the developmental trajectory of emerging analytical approaches. Nevertheless, after a decade of development, the absence of a distinct and independent research paradigm prompts contemplation about the current state of EDA's evolution. Questions arise, such as whether EDA is suitable as a standalone analytical approach and how it can be refined to better contribute to discourse analysis.

Therefore, future research should focus on three key aspects: firstly, exploring whether EDA can serve as an analytical approach for ecological texts. Secondly, deducing exclusive theoretical foundations and analytical frameworks for EDA. Lastly, continuous validation is necessary to ascertain whether these theories and frameworks adequately support EDA's role as an independent analytical approach. Further research is warranted to delve into these considerations and potentially shape the future direction of EDA.

### C. Gaps in Application Domains

Based on the previous analysis, the current applications of EDA span a wide range of domains; it extends from ecological texts to political texts, ecological poetry, news, advertising, and literary works. Existing research papers demonstrate the rich application domain of EDA, which serves as evidence for its utility. As articulated by Wu (2018), EDA advocates for the analysis of all discourses within an ecological framework, thereby constituting a comprehensive ecological analysis. These findings corroborate our earlier assertion that EDA is gradually becoming a primary analytical method for ecological discourse.

However, despite the richness of its application domains, the overall usage of EDA as an analytical approach in discourse analysis deserves more exploration. Simultaneously, expanding the usage of EDA across various domains to validate its versatility is needed. This study attributes the emergence of this situation—on the one hand—to the ongoing refinement process of the analytical framework of EDA, which has yet to reach an advanced stage. On the other hand, it is also associated with the awakening process of linguists' ecological awareness.

Moving forward, researchers can take on the societal responsibility of linguists advocated by Halliday (2001) to focus more on the relationship between humans and ecology. Moreover, future research endeavours should broaden their scope to encompass diverse content domains—such as social media texts, educational materials, legal documents, social movements texts, and other domains. Additionally, researchers can delve into specialised branches within each content domain—integrating ecological concepts and analyses into discourse analysis across various fields.

### D. Gaps in Theoretical Foundations

According to previous research, EDA, as a central analytical approach in eco-linguistics, has made significant strides in the cross-disciplinary utilisation of theories. Remarkably, the analysis incorporating Systemic Functional Linguistic and Cognitive Linguistic theories has gradually shifted the focus of linguistic analysis toward an ecological perspective (Zhao, 2016; Wang, 2018; Ali, 2019). These research findings validate the broad applicability of EDA—affirming its usability in various domains of sociolinguistics.

However, research into eco-linguistics remains in the field—lacking a systematic theory and framework. It continues interpreting the relationship between language and ecology using various linguistic theories. This study contends that



EDA, as an independent analytical approach that mutually reinforces the development of eco-linguistics, can potentially contribute to the advancement of eco-linguistics. The exploration of a more comprehensive eco-linguistic theory is both deserving and feasible.

Therefore, future research directions could focus on constructing an independent research paradigm and theoretical framework for eco-linguistics. This would further enrich the theoretical architecture of EDA. This objective is emphasised by Stibbe (2015; 2022) as one of the overarching goals that EDA should achieve (refer to Section 4.1).

#### *E. Gaps in Research Objectives*

Based on the discussion in the third section of this paper, the research objectives included in this SLR still focus on the discursive analysis level; they primarily distinguish the ecological significance attributes of discourse into positive, contradictory, or harmful ecological discourses. The studies of awareness level and advocacy level are also widely mentioned. The results indicate that research papers employing EDA have oriented their research objectives toward the relationship between human society and ecology. These papers strive to analyse discursive behaviour from an ecological perspective and have verified the widespread existence of attribute differences in ecological discourse within past discursive practices.

However, as an analytical approach that macroscopically considers the relationship between ecology and discourse, more studies on the behavioural level are needed. Given that “language” and “language use” are distinct, Paşcalău et al. (2021) argue that the relationship between humans and nature is fundamentally manifested through language. This study posits that, from a sociolinguistic perspective, the impact of language use on societal beliefs and behaviours, though implicit, is not beyond concretisation and in-depth analysis. This, precisely, is an area where contemporary linguists can direct their efforts.

Future research should investigate how EDA intervenes in reality through language and verify its feasibility (Stibbe, 2015). The academic community can explore how language use influences reality. Additionally, researchers can investigate to what extent ecological issues are weakened or strengthened in the process of language use and how this weakening or strengthening is achieved. Furthermore, EDA studies involving cross-country and cross-language usage comparisons should receive more attention.

## V. CONCLUSION

This systematic literature review examines EDA publications from its inception in 2014 to 2023—aiming for an impartial overview of the research status and gaps. The study intends to summarise the trends in EDA over the past decade and uncover disparities in EDA regarding research domains, theoretical foundations, and research objectives. Moreover, the study identifies gaps in nomenclature, analytical framework, application domain, theoretical foundations, and research objectives.

Key findings include: 1) EDA's research domains have expanded to include various domains such as political discourse, poetry, advertising, novels, and green discourse. However, the overall research volume remains inadequate; 2) The theories predominantly used in EDA are Systemic Functional Linguistics, Cognitive Linguistics, and Corpus Linguistics. Nevertheless, there is a lack of a systematic eco-linguistic framework and theory; 3) Current research objectives in EDA predominantly focus on analysing the ecological attributes of discourse and advocating for ecological protection. Exploration of how language use constructs ecology and the comparative study of ecological languages is still needed; 4) There remains a lack of standardised nomenclature for EDA—ecological discourse analysis is most widely used; and 5) EDA, as an analytical approach, shares an inclusive relationship with other approaches such as CDA, PDA, and MDA. Deducing exclusive theoretical foundations and analytical frameworks for EDA is necessary.

This study provides a 10-year systematic review of research articles utilising EDA since its inception in 2014. Employing a scientific methodology within the framework of SLR, it summarises existing research and identifies gaps in the field. Through this systematic literature review, the study summarised the usage of EDA in past research articles, attempted to delineate research gaps, and proposed recommendations for future research. For linguistic researchers, this study may help in understanding the developmental status of EDA as an analytical approach, thereby expanding research perspectives. For researchers in other ecological domains, this study may showcase some of the linguistic efforts within the ecological realm.

Regarding the limitations of this study, firstly, the research conducted searches exclusively in Scopus, ProQuest, and CNKI—omitting other databases such as Web of Science, Google Scholar, and Pub Scholar. Including these databases could have enriched the scope of coverage. Secondly, the samples are not tested reliably. Different reviewers should examine the retrieval and screening procedures and results to enhance the article's validity and reliability. Furthermore, EDA can be examined from various viewpoints, including narratology, sustainable development, environmentalism, and possibly some multidisciplinary perspectives in the future.

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